

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION**

USOR SITE PRP GROUP,	§	
	§	
Plaintiff,	§	
	§	
v.	§	CIVIL ACTION NO. 4:14-cv-02441
	§	
A-1 CLEANING SEPTIC SERVICE, LLC; et.al.	§	
	§	
Defendants.	§	

AFFIDAVIT OF KIRK W. BROWN

1. My name is Kirk W. Brown and I reside at 12684 Hunters Creek Road in College Station, Brazos County, Texas. I certify that I am over 21 years of age and am competent to make this affidavit.

Background and Qualifications

2. From 1970 through 2001, I was a member of the faculty at Texas A&M University and currently serve as Professor Emeritus in the Soil and Crop Sciences Department, Texas A&M University, College Station, Texas. In 1990, I received a joint appointment to the faculty in Toxicology where I supervised the research of master's degree and doctoral candidates in the field of toxicology as well. My educational background includes a Bachelor of Science degree in Agronomy from Delaware Valley College (1962), Masters of Science degree in Agronomy/Plant Physiology from Cornell University (1964), and a Doctor of Philosophy degree from University of Nebraska (1969). My resume is attached as Appendix 1. It includes my complete list of publications.

3. From 1987 through 2001, I taught a graduate level course entitled "Land Disposal of Wastes". This course addressed the theoretical and practical aspects of land treatment and landfilling of a wide range of municipal, industrial, and hazardous wastes with a special emphasis on the fate and mobility of waste constituents in both soil and surface waters, including the influence of soil physical and chemical properties on the constituent fate. As part of the work for this course,

I taught a section on basic risk assessment and the impacts of risk under the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”).

4. During my tenure at Texas A&M, I conducted extensive research including numerous research projects for the U.S. Environmental Protection Agency (“USEPA”) and the National Institute of Health (“NIH”) on the fate and transport of contaminants, including pathways of exposure and toxicity of hazardous substances to receptors in the environment. As a result of these research efforts, I have authored or co-authored over 190 peer-reviewed, scientific publications, twenty-five of which deal with risk assessment or toxicity of hazardous substances in the environment.
5. I have served on Technical advisory panels to the USEPA, committees of the Office of Technical Assessment and the National Academy of Science. Significant reports resulting from these committee assignments include, Groundwater and Soil Cleanup, Improving Management of Persistent Contaminants (1999); Ranking Hazardous Waste Sites (1994); Coming Clean, Superfund Problems Can Be Solved (1989); and Superfund Strategy (1985).
6. In 1981, I was appointed to the USEPA Land Treatment Task Force where I served from 1981 through 1985. As part of my assignment with the Task Force, I evaluated the alternatives for land disposal of wastes and the risk associated the disposal alternatives. While a member of this Task Force, I testified before the U.S. House of Representatives – Science and Technology Committee in November 1982 on the adequacy of USEPA’s liquid management system to protect groundwater at hazardous waste landfills, which lead to the passage of the Hazardous and Solid Wastes Amendments of 1984 under the Resource Conservation and Recovery Act (“RCRA”).
7. In 1983 and 1984, I was a member of the Advisory Panel to the U.S. Congressional Office of Technology Assessment. This panel was tasked with determining the effectiveness of current USEPA programs to clean up uncontrolled hazardous waste sites. As part of my assignment with this committee, I reviewed and evaluated the toxicity and imposed risk to receptors due to hazardous substances and provided recommendations for improving the efficiency of the USEPA programs to mitigate risk at uncontrolled hazardous waste sites.
8. In 1984, I was a member of the Office of Water Regulations and Standards Committee on Municipal Sludge Landfilling, which was formed to advise USEPA on the pollutants which should be regulated for disposal and the methods or procedures to be used for regulating such

pollutants. As part of my work for this committee, I assessed the hazards and risks associated with the hazardous substance contained in municipal sewage sludge and provided recommendations for regulations of metals in sewage sludge based on the degree of risk presented by exposure to these constituents.

9. From 1987 through 1995, I was a member of the Advisory Panel to U.S. Congressional Office of Technology Assessment which was tasked with assessing the effectiveness of the USEPA in identifying, prioritizing, and cleaning up hazardous waste sites. As part of my work for this committee, I evaluated the impacts of exposure from different media and the effectiveness of available technologies to mitigate exposure and risk from hazardous waste sites.
10. From 1991 through 1994, I served on the National Academy of Sciences, Committee on Remedial Action Priorities for Hazardous Waste Sites, where I evaluated the role of risk assessment and mitigation of risk in the decision process for remedial action.
11. From 1995 through 1998, I served on the National Academy of Sciences, National Research Council Committee on Environmental Technologies, Subcommittee on Landfills. As part of my assignment to this committee, I evaluated the risk due to contaminants in soil and groundwater and recommended strategies for the management and control of recalcitrant wastes for the reduction of risk due to these persistent contaminants.
12. In addition, I have served on numerous USEPA review panels addressing toxicity and risk including the following, among others:
 - a. USEPA Panel to Review the Acceptability of Landfill Disposal of Sewage Sludge (1984);
 - b. USEPA Panel to Write a Protocol for Mutagenicity Sample Preparation (1984);
 - c. USEPA Hazardous Waste Center Review Panel (1988); and
 - d. USEPA Review for Risk Assessment for Petroleum Industry Hazardous Waste Listing Determination (1995).
13. I was the primary author of a 1982 Publication for the USEPA's Municipal Environmental Research Laboratory entitled, Characteristics of Hazardous Waste Streams. This publication addressed the specific industrial sources of waste and the hazardous substances they contain as related to the standard industrial classification (SIC) codes of the industrial generator.
14. I was the primary author of a 1983 publication for the USEPA entitled, Hazardous Waste Land Treatment. This publication specifically addressed the treatment of hazardous waste from

industrial waste streams to mitigate risk and eliminate risk to potential receptors upon completion of land treatment.

15. Additionally, I provided technical review as a member of peer review panels for the United States Department of Health and Human Services, Public Health Services for review of toxicological profiles for the Agency for Toxic Substances and Disease Registry (“ATSDR”) from 1990 through 2000.
16. I have been a consultant in the field of environmental science and engineering for the past 36 years. I founded K. W. Brown and Associates, Inc., and served as President from 1980 until 1991. I was employed as a Principal Consultant with K. W. Brown Environmental Services from 1991 until 1999 and with SI Group, LP from 2000 through 2008. In March 2009, I joined the firm of ThermoTech Intl. (TTI) and was employed as a Principal Consultant through April 2011. Since that time, I have been employed as an independent consultant.
17. As a consultant, I have studied and am familiar with industrial, commercial, and residential waste, and the disposal facilities that eventually contain such waste. I have extensive expertise regarding the fate and transport of hazardous substances which were contained in these wastes when released to the environment in general, and to the soils in particular. I have researched the risks associated with leachate from landfills containing these wastes. I have also investigated the fate and behavior of organic compounds and metals found in leachate from landfills and the resulting impacts on the underlying groundwater. I have reviewed numerous remedial plans and proposed remedies pertaining to landfills containing industrial, commercial, and residential wastes.
18. Through these years of consulting, numerous private and public clients have employed me. My expertise has been utilized for site assessments, data review and interpretation, waste management activities, the study of fate and transport of contaminants in the environment, the movement of contaminants in groundwater and surface water, the design and implementation of remedial actions for recalcitrant organic compounds, and other related environmental matters. I have also reviewed and interpreted a large quantity of analytical data for soils and groundwater, as well as borings logs, field logs, technical reports, and other information related to the environmental conditions of a site.
19. As a consultant, I have evaluated or analyzed numerous waste disposal and landfill sites including the following: Laurel Park Landfill, Beacon Heights Landfill, Lone Pine Landfill, Ft.

Bend County Landfill, Oak Grove Landfill, East Bethel Landfill, Dickson County Landfill, and Sinton Landfill, among others. In addition, I have also worked on the following Superfund sites: Hardage Criner, Love Canal Landfill, Lowrey Landfill, Montana Pole, National Gypsum, Riley Tar, Sharon Steel, Helen Kramer Landfill, Sikes' Pits, Metal Bank of America, Tar Creek, and the West Dallas Lead Site.

20. I am personally familiar with the definition of "hazardous substance" as defined in § 101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act and under the statutes and regulations incorporated by reference into that section. A hazardous substance under CERCLA is defined in 42 U.S.C. § 9601 (14), invoking the EPA designations under 42 U.S.C. § 3001 and 9602, among other statutes. Included in the definition of a CERCLA hazardous substance are certain hazardous wastes which are either listed in 40 C.F.R. § 261, Subpart D or have certain identified characteristics as described in 40 C.F.R. § 261, Subpart C. Likewise, I am familiar with the regulations defined in the Texas Solid Waste Disposal Act (H&S Code § 361) and the requirements specified for the disposal of solid wastes contained in that chapter.
21. I have qualified and given testimony as an expert witness in civil cases in federal and state courts, regulatory hearings, and enforcement actions pertaining to hazardous wastes, organic chemical contamination, and the fate and transport of organic chemicals, metals, and other contaminants in environmental media, as well as exposure and risk, among other issues. I have offered opinions related to these topics at several Superfund sites. A complete list of cases in which I have rendered opinions is presented in Attachment 2.
22. As a result of these activities, I am intimately familiar with the hazardous substances contained in the wastes received by the USOR site and am well aware of the risk associated with the exposure to these hazardous substances when released to the environment.

Data and Other Information Considered

23. I was retained by counsel for the U.S. Oil Recovery Site PRP Group in connection with the above-captioned lawsuit. One of the subjects I was asked to consider was whether waste streams of certain Defendant companies, which I understand had been disposed of at the USOR site in Harris County, Texas, contained "hazardous" substances, giving "hazardous" the same meaning it has in Federal and state environmental law.

24. At the request of counsel for the Plaintiffs, I have prepared this affidavit in response to recent Motions to Dismiss and/or Motions to Exclude by members of the Defendants. I have reviewed the site information and discovery responses provided by counsel as well as information gathered independently and offer my professional opinions in this report. The opinions I have formed in this matter are based on my education and experience as well as the information cited for this report in Attachment 3.

AAR Incorporated

25. I have reviewed the discovery records concerning the operations of AAR Incorporated (“AAR”) which were provided by counsel.
26. In the Defendants’ Motion to Dismiss, AAR requests “the USOR Group be ordered to provide a more definite statement of the facts supporting the USOR Group’s allegations that AAR arranged for disposal or treatment or transport for disposal or treatment of hazardous substances owned or possessed by AAR”. In my opinion, the wastes generated by AAR contained hazardous substances.
27. In the Texas Commission on Environmental Quality (“TCEQ”) Central Registry, AAR is affiliated with a stormwater permit for wrecking and demolition work (SIC Code 1795) at a site located at the intersection of FM 1098 and Anne Preston Rd. in Waller County, Texas (31, 32).
28. Stormwater runoff generated from an industrial construction site would, more likely than not, have contacted the following construction related materials: Waste paints, varnish, solvents, sealers, thinners, resins, roofing cement, waste adhesives, machinery lubricants, used caulking, treated wood, lead-based paint, lead flashing and/or solder (16, 22).
29. In my opinion, based on the AAR discovery records that I reviewed, my knowledge and experience with construction and demolition waste processes carried out by companies like AAR during the time period in question, and references provided by EPA and other sources, the materials listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, lead, and zinc (16, 30).
30. As a result of the direct contact with construction and demolition debris, the stormwater generated at the AAR construction site would have contained some, if not all, of the hazardous substances contained in the construction and demolition debris (16).

31. Further, I understand that the waste streams of AAR, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
32. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone. (85, 86)
33. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified lead and zinc, among other metals as contaminants of concern (83).

Angelica Textile Services, Inc.

34. I have reviewed the discovery records concerning the operations of Angelica Textile Services, Inc. (“Angelica”) which were provided by counsel.
35. In the Defendants’ Motion to Dismiss, Angelica states, “Despite its allegations regarding the “release of hazardous substances” and “contaminated liquids” at the USOR Site, (*Id.* at ¶¶22 and 39), Plaintiff offers no facts about Defendants or how they allegedly contributed to the contamination of the USOR Site. Plaintiff alleges that Angelica “by contract, agreement, or otherwise arranged for disposal or treatment, and/or arranged with a transporter for transport for disposal or treatment, at least 3,000 gallons of waste containing hazardous substances owned or possessed by Angelica, at the USOR Site.” (but didn’t specify how) (*Id.* at ¶176). Plaintiff further alleges that the “waste generated” by Angelica is a “lint trap” that contained some or all of the following hazardous substances: perchloroethylene, toluene, trichloroethane and/or xylenes. (*Id.* at ¶177). Plaintiff fails to describe how it came up with this conclusion.”
36. According to the TCEQ Central Registry, Angelica Textile Services, Inc. is registered as an organization whose primary business is laundry service that also maintained a fleet refueling operation at its Houston area location (33).
37. Commercial laundry operations routinely consume the following materials through the regular course of their business: cleaning products, brush cleaners, degreasers, deodorizers, disinfectants, drain openers, drain cleaners, fabric dyes, lubricants and oils, polishes and waxes, solvents, spot/stain removers, as well as tar and wax removers (25).
38. Based on my review of the Angelica discovery records, my knowledge and experience with commercial laundry and dry cleaning processes carried out by companies like Angelica during the time period in question, and references provided by USEPA and other sources, the materials

listed above would have contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, perchloroethylene, trichloroethylene, trichloroethane, lead, and zinc (22, 30).

39. As a result of the cleaning and maintenance activities conducted by Angelica, the lint trap waste generated at Angelica's place of business would have included residuals from the cleaning operations such as spent solvents and cleaning products, in addition to grease, oil and dirt from the laundered articles. In my opinion, the lint trap wastes would have contained some, if not all, of the hazardous substances found in the cleaning products listed above (23, 25).

40. Further, I understand that the waste streams generated by Angelica, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.

41. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone. (85, 86)

42. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified lead and zinc, among other metals as contaminants of concern. (83)

Bolivar Barge Cleaning Service, LLC

43. I have reviewed the discovery records concerning the operations of Bolivar Barge Cleaning Service, LLC ("Bolivar Barge") which were provided by counsel.

44. In the Defendants' Motion to Dismiss, Bolivar Barge stated that "Plaintiff has failed to state a claim against Bolivar Barge under both CERCLA and the TSWDA. Specifically, Plaintiff has failed to plead sufficient facts that show the purported substance that Bolivar Barge arranged for disposal or treatment and/or arranged with a transporter for transport for disposal or treatment is hazardous. Indeed, the only apparent bases for Plaintiff's allegations against Bolivar Barge are found in the manifests and invoices that Plaintiff itself provided, which expressly state that the alleged substances are *non-hazardous*". Contrary to the statement from the Defendant, the wastes generated by Bolivar Barge, in my opinion, contained hazardous substances.

45. In the TCEQ Central Registry, Bolivar Barge is registered as a generator of industrial waste at the facility located at 1415 Quarles Ave, Port Bolivar in Galveston County, Texas. The applicable NAICS codes for Bolivar Barge include 336611 and 562119

46. In their Notice of Registration with the State, Bolivar Barge identified waste streams including 1) oily water, oil water emulsions, or mixtures containing oil, and 2) plant trash as wastes generated by the facility and collected for off-site disposal (34).
47. In my opinion, based on the Bolivar Barge discovery records that I reviewed, my knowledge and experience with ship repairing processes carried out by companies like Bolivar Barge during the time period in question, the repair processes conducted by Bolivar Barge would have included machining and metal working, cleaning and degreasing, surface preparation, and painting, among others (13, 14).
48. The processes, listed above, would have generated one or more of the following substances as wastes: acetone, benzene, toluene, xylene, methyl ethyl ketone, methylene chloride, dichloroethylene, trichloroethylene, perchloroethylene, trichloroethane, chromium, copper, lead, and zinc; all of which are hazardous substances under CERCLA. (EPA, 1990; 30; EPA, 1997).
49. As a result of repair processes conducted by Bolivar Barge and the washing operations of tanks, holds, and bilge facilities on the vessels, the wash water generated by Bolivar Barge would have contained some, if not all, of the hazardous substances listed above. (USEPA 1990).
50. Further, I understand that the waste streams of Bolivar Barge, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
51. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone, methylene chloride, dichloroethylene, trichloroethylene, perchloroethylene, trichloroethane. (85, 86)
52. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead and zinc, among other metals as contaminants of concern (83).

Boxer Property Management Corporation

53. I have reviewed the discovery records concerning the operations of Boxer Property Management Corporation ("Boxer") which were provided by counsel.
54. In the Defendants' Motion to Dismiss, Boxer stated "The USOR Site Group's Third Amended Complaint fails to properly state a claim against Boxer because Plaintiff has wholly failed to allege any facts supporting the claim that Boxer arranged for disposal or treatment or

transportation for disposal or treatment of hazardous substances. Boxer's arrangement for disposal of hazardous waste is a necessary element of the USOR Site Group's CERCLA and TSWDA arranger claims. Plaintiff further cannot meet its burden in pleading factual allegations that demonstrate Boxer generated hazardous substances."

55. In the Texas Commission on Environmental Quality ("TCEQ") Central Registry, Boxer is not registered as a regulated entity. Further, no information has been produced by the Defendant as to the location or specific details on the process that generated the waste.
56. Without further information, I am unable to form an opinion with respect to this waste stream at this time.

Cedarwood Development Inc.

57. I have reviewed the discovery records concerning the operations of Cedarwood Development Incorporated ("Cedarwood") which were provided by counsel.
58. In the Defendants' Motion to Strike Portions of the Plaintiffs Third Amended Complaint, Cedarwood requests "that the Court strike the addition of "... anthracene, antimony, aroclor 1260 . . . barium . . . beryllium . . . dichloroethane . . . ethylbenzene, ethylene dibromide, fluoranthene . . . indeno(1,2,3-cd)pyrene . . . mercury . . . methyl tert-butyl ether . . . naphthalene . . . polychlorinated biphenyls, selenium . . . [and] xylenes" from paragraph 465 of the Third Amended Complaint. While Cedarwood argues that none of these substances were present in their wash water, in my opinion, the wastes generated by Cedarwood contained some, if not all, of these hazardous substances.
59. In the TCEQ Central Registry, Cedarwood is listed as the regulated entity for a property located at 605 Highway 96 S in Silsbee, Hardin County, Texas.
60. In March 2005, a leaking underground petroleum storage tank was remediated by removing the leaking tank and ancillary piping from the ground (35). Storm water runoff and wash water was collected in the excavated tankhold, where the water contacted contaminated soils and liquids that had leaked from the tank.
61. In my opinion, based on the Cedarwood discovery records that I reviewed, my knowledge and experience with leaking underground petroleum storage tank remediation operations, carried out by companies like Cedarwood during the time period in question, and references provided by EPA and other sources, the petroleum products that leaked from the removed tank contained one or more of the following substances, all of which are hazardous substances under CERCLA:

benzene, cadmium, chromium, copper, dichloroethylene, ethylbenzene, ethylene dibromide, lead, methyl tert-butyl ether, nickel, toluene, xylenes, and zinc (22, 23, 29). With respect to these hazardous substances, benzene, ethylbenzene, toluene, and xylene are principal components of gasoline. Dichloroethylene, ethylene dibromide, lead (in the form of tetraethyl lead), and methyl tert-butyl ether were once used as gasoline additives. Metals, such as, cadmium, chromium, copper, lead, nickel, and zinc, occur as trace components in gasoline.

62. As a result of the direct contact between the wash water and the contaminated soils of the tankhold, the wash water generated at the Cedarwood site would have contained some, if not all, of the hazardous substances contained in the petroleum products released from the tank (23, 29).

63. Further, I understand that the waste streams of Cedarwood, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.

64. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: benzene, ethylbenzene, toluene, xylene, and dichloroethylene. (85, 86)

65. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

Cole Chemical & Distributing, Incorporated

66. I have reviewed the discovery records concerning the operations of Cole Chemical & Distributing Incorporated (“Cole Chemical”) which were provided by counsel.

67. In the Defendants’ Motion to Dismiss, Cole Chemical states that “Plaintiff has not pleaded facts that show that Defendant arranged for disposal and/or treatment and/or arranged with a transporter for transport for disposal or treatment of hazardous materials”. In my opinion, the wastes generated by Cole Chemical contained hazardous substances.

68. In the Texas Commission on Environmental Quality (“TCEQ”) Central Registry, Cole Chemical and Distributing Inc. is registered as the regulated entity for the facility operating at 14935 Jacintoport Blvd, in Houston, Harris County, Texas. Cole Chemical operated a warehouse with blending and packaging processes at the facility through 2004 (5, 8). Cole Chemical is affiliated with SIC codes 4266 and 5169 including the distribution and storage of chemicals and related products (36).

69. As part of its operation, Cole Chemical maintained a concrete enclosure for containment of spills and accidental releases associated with the blending and packaging processes. Through these processes, residual chemicals, such as acids, alcohols, alkalis, aliphatic naphthas, amines, aromatic hydrocarbon compounds, chlorinated solvents, glycols, glycol ethers and/or ketones would have collected within the concrete enclosure (37).
70. In my opinion, based on the Cole Chemical discovery records that I reviewed, my knowledge and experience with fuel blending operations carried out by companies like Cole Chemical during the time period in question, and references provided by EPA and other sources, the materials listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, trichloroethane, trichloroethylene, perchloroethylene, lead, and zinc (5, 8, 22).
71. Over time, rainwater collected within the concrete enclosure. As a result of the direct contact with residual chemicals and additives, the rainwater generated at the Cole Chemical site would have contained some, if not all, of the hazardous substances released inside the concrete enclosure (11).
72. Further, I understand that the waste streams of Cole Chemical, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
73. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, trichloroethane, trichloroethylene, and perchloroethylene (85, 86)
74. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified lead and zinc, among other metals as contaminants of concern (83).

Danny Herman Trucking, Inc.

75. I have reviewed the discovery records concerning the operations of Danny Herman Trucking, Inc. ("Danny Herman Trucking") which were provided by counsel.
76. In Danny Herman Trucking Inc.'s Responses to Plaintiff's First Discovery Requests, Danny Herman Trucking stated, "As previously disclosed to Plaintiff on multiple occasions related to this litigation, DHT (Danny Herman Trucking) has no record related to the Invoice, and no

records that any of its trucks were serviced in the Houston/Pasadena, Texas area during the relevant period of the Invoice (i.e., March 2005). Therefore, DHT does not have anyone to disclose that has any knowledge of any purported waste consignment, shipment, transportation or other delivery under the Invoice to the Site.”

77. In the Defendants’ Motion to Dismiss, Danny Herman Trucking states “Plaintiff’s amended contention that the ‘oily’ substance referenced in the Invoice contains such contaminates is nothing more than a conclusory guess by Plaintiff. Accordingly, Plaintiff has not sufficiently pled facts that show that the purported substance referenced in the Invoice is a hazardous substance under federal or state statutes or regulations, including but not limited to CERCIA and TSWDA”.
78. In the TCEQ Central Registry, Danny Herman Trucking is registered as a general freight hauling company with facility locations in El Paso and Brownsville, Texas. In the TCEQ database, Danny Herman Trucking is the regulated entity affiliated with emergency response events located at the intersection of Loop 322 and Interstate 20 in Abilene, Texas and at the intersection of Interstate 10-W and Simmons Road in Orange County, Texas.
79. While the aforementioned emergency response events occurred after the period of time in question, it is probable that a vehicular accident or emergency response situation, such as those documented by the TCEQ, could have occurred.
80. Based on the information contained in the discovery records from Danny Herman Trucking, I do not have access to the specific details or location associated with the waste attributed to Danny Herman Trucking. I am therefore, unable to form an opinion at this time, as to the nature of the waste generated or the hazardous substances contained therein.
81. In my opinion, based on the Danny Herman Trucking discovery records that I reviewed, my knowledge and experience with clean-up of fuel spills and emergency response actions during the time period in question, such as those documented in the TCEQ database for Danny Herman Trucking, and references provided by EPA and other sources, the spilled fuel and other materials resulting from vehicular accidents contained one or more of the following substances, all of which are hazardous substances under CERCLA: benzene, ethyl benzene, toluene, xylene, methyl ethyl ketone, methyl tert-butyl ether, lead, and zinc (22, 30).

Empire Truck Lines, Inc.

82. I have reviewed the discovery records concerning the operations of Empire Truck Lines Incorporated (“Empire Truck”) which were provided by counsel.
83. In Defendant Empire Truck Lines. Inc.’s Answer and Affirmative Defenses, Empire Truck declares “Plaintiff fails to allege facts sufficient to state a claim against ETL (Empire Truck) upon which relief may be granted; moreover, Plaintiff fails to meet the pleading standard of *Bell Atlantic Corp. v. Twombly*, 550 U.S. 544 (2007) and *Ashcroft v. Iqbal*, 556 U.S. 662 (2009). Pursuant to Fed. R. Civ. P. 12(b)(6), Plaintiff’s claims should be dismissed in their entirety.”
84. In my opinion, the wastes generated by Empire Truck contained hazardous substances.
85. In EPA’s Facility Registry Service, Empire Truck is registered as a hazardous waste generator with a facility location at 10043 Wallisville Rd, Houston, Texas (40). The registration for Empire Truck identifies the facility as a truck trailer manufacturing company (NAICS code 336212) and a used oil handler (SIC code 3402).
86. In the RCRAInfo database, Empire Truck is identified as a hazardous waste generator with the waste codes D001, D018, D027, D039, and F001. The hazardous substances contained in these waste codes include benzene, 1,4-dichlorobenzene, tetrachloroethylene, and a mixture of spent halogenated solvents including tetrachloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, and chlorinated fluorocarbon compounds.
87. Operations conducted by Empire Truck at their Houston facility would also have included truck maintenance, mechanical repair, metal working, painting, and used oil handling (13, 14, 20, 23, 28).
88. In my opinion, based on the Empire Truck discovery records that I reviewed, my knowledge and experience with metal-working and manufacturing operations carried out by companies like Empire Truck during the time period in question, and references provided by EPA and other sources, the wastes produced by the processes listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, trichloroethane, chromium, copper, lead, and zinc (4, 14, 20).
89. Used oil produced as a result of these processes at the Empire Truck facility would have contained some, if not all, of the hazardous substances listed above. (22, 27).

90. Further, I understand that the waste streams of Empire Truck, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.

91. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, and trichloroethane. (85, 86)

92. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, and zinc, among other metals as contaminants of concern (83).

Estes Express Lines

93. I have reviewed the discovery records concerning the operations of Estes Express Lines (“Estes Express”) which were provided by counsel.

94. In the Defendants’ Motion to Dismiss, Estes Express states “Estes Express is entitled to dismissal of Plaintiff’s claims against it because Plaintiff’s Complaint fails to state claims under CERCLA and the TSWDA. The Complaint fails plead facts which would demonstrate that Estes Express by contract, agreement, or otherwise arranged for disposal or treatment and/or arranged with a transporter for transport for disposal or treatment of at least 3,000 gallons of waste containing “hazardous substances.” Plaintiff’s attempt to establish liability for Estes Express rests on vague, unclear, and, insufficient facts.”

95. In the Texas Commission on Environmental Quality (“TCEQ”) Central Registry, Estes Express is registered as a trucking company with an SIC Code of 4213 (41).

96. On August 2, 2005, Estes Express hauled liquid chemicals to Cybershield of Texas, an electroplating facility. Prior to the transfer of the materials to Cybershield, one of the plastic totes containing liquids ruptured and leaked into a nearby drainage ditch.

97. According to the Contact Report and Incident Summary Report filed by Action Environmental, the spilled liquids and wash water were cleaned-up by Eagle Construction and Environmental Services (“Eagle”) with the wastes taken to USOR for disposal.

98. In the Contact Report, provided through Discovery, Estes Express, on August 3, 2005, sent a copy of the material safety data sheet (“MSDS”) for the spilled liquids to Eagle prior to the clean-up. Communications noted for later day indicated that Eagle collected soil and wash water samples for analysis.

99. Unfortunately, the MSDS and results of the analytical sampling were not provided through Discovery. As a result, I am unable to make any determination as to the nature of the substances released due to the spill and the hazardous nature of the materials disposed of at USOR.

Flex Oil Service, LLC

100. I have reviewed the discovery records concerning the operations of Flex Oil Service, LLC (“Flex Oil”) which were provided by counsel.

101. In the Defendants’ Motion to Dismiss, Flex Oil states “Flex is entitled to dismissal of the Plaintiffs Complaint because Plaintiff has failed to state a claim under CERCLA and the TSWDA. Plaintiff has not pleaded facts that show Flex disposed of any substances nor arranged for disposal or treatment and/or arranged with a transporter for transport for disposal or treatment of a hazardous material.” In my opinion, the wastes generated by Flex Oil contained hazardous substances.

102. In the TCEQ Central Registry, Flex Oil is registered as a petroleum storage and terminal storage facility (NAICS Code 324191 and 424710). Flex Oil was also registered as a used oil handler at their facility located at 16514 De Zavalla Road, Suite A, in Channelview, Harris County, Texas (42). Additionally, the facility was granted a Stormwater Permit through the TCEQ under the name of Flex Tank Systems, LLC.

103. From January 2004 through at least, February 2009, Flex Oil generated used fuel oil, oily water, oily pads, oily filters, floor dry, grease drums and drums of axle grease along with stormwater runoff through their operations at the Channelview facility (23, 29).

104. In my opinion, based on the Flex Oil discovery records that I reviewed, my knowledge and experience with oil recovery processes carried out by companies like Flex Oil during the time period in question, and references provided by EPA and other sources, the waste streams generated by Flex Oil listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, ethyl benzene, toluene, xylene, methyl ethyl ketone, chromium, lead, and zinc (23, 26, 28).

105. Stormwater runoff coming in contact with these waste streams would have contained oil and the hazardous substances therein, yielding stormwater with unacceptable levels of hazardous substances to be discharged under the stormwater permit for the facility.

106. Further, I understand that the waste streams of Flex Oil, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
107. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone. (85, 86)
108. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, lead and zinc, among other metals as contaminants of concern (83).

Ho Ho Ho Express Incorporated

109. I have reviewed the discovery records concerning the operations of Ho Ho Ho Express Incorporated (“Ho Ho Ho Express”) which were provided by counsel.
110. In the Defendants’ Motion to Dismiss, Ho Ho Ho Express stated “Plaintiff fails to allege facts sufficient to make a reasonable inference that Ho Ho Ho Express generated or arranged for transport of a ‘hazardous substance’ contained at the site.”
111. In its Response to Plaintiff’s First Discovery Request, Ho Ho Ho Express responded, “After inquiry, Ho Ho Ho Express has found no information or documentation to indicate that it transported or generated any waste or materials of any sort that went to the Site” and “If its Rule 12(b)(6) motion to dismiss is denied, Ho Ho Ho Express will provide information concerning any waste disposal practices which is relevant to Plaintiff’s complaint allegations”.
112. In the TCEQ Central Registry, Ho Ho Ho Express is a regulated entity that conducts fleet refueling at its facility located at 6188 Lawford Lane, Houston, Harris County, Texas. The facility maintains a petroleum storage tank registered to Ho Ho Ho Express Shop (43) .
113. In my experience with refueling operations, leaks and spills are commonplace, releasing liquids containing hazardous substances to the environment. Clean-up of these releases would produce “oily water” containing hazardous substances. However, I am unable to form an opinion as to the content of the waste streams produced by Ho Ho Ho Express due to the failure of the Defendant to provide relevant information related to the wastes generated.

Houston Independent School District

114. I have reviewed the discovery records concerning the operations of Houston Independent School District (“Houston ISD”) which were provided by counsel.

115. In the Defendants' Answer and Affirmative Defenses to Plaintiff's Second Amended Complaint, Houston ISD stated "HISD is not liable for any costs that result from the cleanup of materials or constituents that are not 'hazardous substances' as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), or that are excluded petroleum products not within the purview of CERCLA." Further Houston ISD stated, "HISD is not liable under the TSWDA for any costs that result from the cleanup of a facility that is not a 'solid waste facility' or that result from the cleanup of materials or constituents that are not 'hazardous substance[s],' 'hazardous waste,' or 'solid waste' as defined by the TSWDA. TEX. HEALTH & SAFETY CODE ANN. § 361.003". In my opinion, the waste streams generated by Houston ISD were mixtures of wastes, which contained hazardous substances.
116. In the TCEQ Central Registry, Houston ISD is registered as the regulated entity for 120 facilities in and around the greater Houston area (44).
117. Between 2004 and 2010, ten of the Houston ISD facilities were affiliated with stormwater permits for new construction (SIC Code 1542). Addresses for the sites of new construction included the following locations, all in Houston, Harris County, Texas:
 - 8302 Braes River Drive,
 - 8100 Elrod Street,
 - 510 Jensen Drive,
 - 8200 Carvel Lane,
 - 515 E Rittenhouse Street,
 - 413 E 13th Street,
 - 4900 Market Street,
 - 6350 Pinemont Drive,
 - 1401 W 43rd Street, and
 - 5302 Allendale Road.
118. Stormwater runoff generated from an industrial construction site would, more likely than not, have contacted the following construction related materials: waste paints, varnish, solvents, sealers, thinners, resins, roofing cement, waste adhesives, machinery lubricants, used caulking, treated wood, lead-based paint, lead flashing and/or solder (16).
119. Houston ISD conducted fleet refueling operations at thirteen facilities with the following locations in Houston, Harris County Texas:

- Barnett Facility, 6700 Winfree Drive,
- Butler Facility, 6690 Carved Rock Drive,
- Butler Stadium, 13755 Main Street,
- Central Facility, 7700 Wallisville Road,
- Food Services Facility, 2000 Lyons Avenue,
- Formerly Squaw Transit Facility, 4534 Wilmington Street,
- Future Elementary School Facility, 5927 Waltrip Street,
- Jefferson Davis High School, 1101 Quitman Street,
- North Main Texaco, 2224 N Main Street,
- HISD Transportation Facility, 228 McCarty Street,
- Northwest Bus Operations Center, 6350 Pinemont Drive,
- North Forest Facility, 10729 Mesa Drive, and
- North Maintenance Facility, 9229 Bauman Road.

120. As a result of leaks and spills associated with refueling operations, wash water and stormwater runoff from these fleet refueling locations would more likely than not, have contacted the residual fuels, if not, dissolving the residual fuels entirely.

121. The former Houston ISD refueling location at 3311 Beauchamp Street in Houston, Harris County, Texas was found to have a leaking underground storage tank at the end of January 2004. The leaking underground petroleum storage tank was remediated by removing the leaking tank and ancillary piping from the ground. Storm water runoff and wash water was collected in the excavated tankhold, where the water contacted contaminated soils and liquids that had leaked from the tank.

122. The following five facilities, all in Houston, Harris County, Texas and operated by Houston ISD, were registered with the TCEQ in the Industrial and Hazardous Waste, Solid Waste Registration program.

- a. Houston ISD Transportation Department, 6700 Winfree Drive,
- b. HISD Butler Facility, 6690 Carved Rock Drive,
- c. Houston ISD Transportation, 228 McCarty Street,
- d. North Forest Facility, 10729 Mesa Drive, and
- e. North Maintenance Facility, 9229 Bauman Road.

123. The waste streams registered with the Industrial and Hazardous Waste, Solid Waste Registration program as hazardous wastes included spent solvents, immersion cleaners, paint waste, used paint booth filters, outdated and off-specification paint, waste mineral spirits and waste paint related materials (16).
124. In my opinion, based on the Houston ISD discovery records that I reviewed, my knowledge and experience with leaking underground petroleum storage tank remediation operations, carried out by companies like Houston ISD during the time period in question, and references provided by EPA and other sources, the petroleum products that leaked from the removed tank contained one or more of the following substances, all of which are hazardous substances under CERCLA: benzene, cadmium, chromium, copper, dichloroethylene, ethylbenzene, ethylene dibromide, lead, methyl tert-butyl ether, nickel, toluene, xylenes, and zinc (23, 29).
125. As a result of the direct contact between the wash water and the contaminated soils of the tankhold, it is my opinion that the wash water generated at the 3311 Beauchamp Street site would have contained some, if not all, of the hazardous substances contained in the petroleum products released from the tank.
126. Further, based on my knowledge and experience with construction operations carried out by companies like Houston ISD and their contractors, the stormwater generated at the Houston ISD construction sites would have contacted some, if not all, of the waste streams containing hazardous substances produced as construction debris. (16) Therefore, it is my opinions that stormwater runoff from the Houston ISD constructions sites, more likely than not, would have contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, lead, and zinc (16, 30).
127. Furthermore, based on my knowledge and experience with maintenance and repair operations carried out by companies like Houston ISD at their building and transportation maintenance facilities, the waste streams registered with the TCEQ for these facilities would, more likely than not, have contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, trichloroethane, chromium, copper, lead, and zinc (13, 20, 23, 29, 30).

128. I understand that the waste streams of Houston ISD, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
129. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, and trichloroethane. (85, 86)
130. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, and zinc, among other metals as contaminants of concern (83).

Humble Elevator Service, Inc.

131. I have reviewed the discovery records concerning the operations of Humble Elevator Service, Incorporated (“Humble Elevator”) which were provided by counsel.
132. In the Defendants’ Motion to Dismiss, Humble Elevator argues “HES [Humble Elevator] is entitled to dismissal of the Plaintiff’s Complaint because Plaintiff has failed to state a claim under CERCLA and the TSWDA. Plaintiff has not pleaded facts that show HES disposed of any substance nor arranged for disposal or treatment and/or arranged with a transporter for transport or treatment of a hazardous material. In fact, the only apparent basis for Plaintiff’s allegation against HES are found in a invoice and manifest for Specialized Maintenance a company hired by HES.”
133. In the Defendant’s Responses to Plaintiff’s First Set of Interrogatories, Humble Elevator stated, “Humble Elevator Service, Inc. does not generate waste material, nor do we treat, store, or dispose of waste”. Further, Humble Elevator stated, “Humble Elevator Service, Inc. does not generate or handle waste. We were hired by Amtech Elevator to do a cylinder replacement for 9888 Bissonnet.” Finally, Humble Elevator confirmed, “We do not generate a waste stream. We do cylinder replacements on elevators, in the process, sometimes the well hole (which is under the building) is filled with sand, waste and oil. The property owner, and/or property management needs this removed for us to complete the work. We contact Specialized Maintenance to remove this from the job site. Specialized Maintenance removes, transports, and disposes of the sludge that is removed from the well hole under the building for the owner of the building.”

134. I strongly disagree with these statements. When Humble Elevator changes out an elevator cylinder, the spent or broken cylinder becomes waste from the process. Additionally, any spent fluids such as hydraulic oils, solvents, degreasing compounds, and/or metal fragments from cutting, grinding, or polishing operations would be generated as wastes. These latter wastes, if not collected separately, would accumulate in the well hole, along with oil, water and sand.

135. Humble Elevator is not listed in the TCEQ customer database. Information regarding their operations and waste streams is not regulated and is unavailable for me to evaluate. When combined with the Humble Elevator's unwillingness to disclose information regarding their maintenance and repair processes, I am unable to form an opinion regarding the hazardous nature of the wastes attributed to Humble Elevator at this time.

IBEX Chemicals, Inc.

136. I have reviewed the discovery records concerning the operations of IBEX Chemicals, Incorporated ("IBEX") which were provided by counsel.

137. In IBEX's Responses to Plaintiff's First Set of Interrogatories, IBEX replied "IBEX is not a generator of hazardous waste. Defendant was not the entity that selected the USOR site facility for the disposal of waste. The selection of the disposal site was made by Gator Environmental & Rentals, the 'Arranger'". Further, IBEX admits that it generated "2,700 gallons of soybean oil on or about March 27, 2007" and "3,000 gallons of Recycle/non-waste (2% Oil, 98% Water) on or about February 23, 2011".

138. In the TCEQ Central Registry, IBEX is the regulated entity for the facility located at 12950 Emmitt Road in Houston, Harris County, Texas. Operations conducted by IBEX at the site were classified as miscellaneous chemical product manufacturing (NAICS Code 325998). IBEX is affiliated with Weatherford Enterra, Inc., an oil field services and manufacturing company (45). The facility was assigned an Industrial and Hazardous Waste Solid Waste Registration with waste streams including spent solvents, paint waste, waste oil, used filters, scrap metal, and general plant trash (23).

139. Weatherford Enterra, with the same facility address as IBEX, is listed in EPA's RCRAInfo database as a generator of hazardous waste (46). Waste codes assigned to Weatherford's operations include D001, D006, D007, D008, D018, D039, F003 and F005.

140. Based on the IBEX discovery records that I reviewed, IBEX failed to disclose its processes for refining and blending of the soybean oils and the additives that were incorporated into the off-spec oils that were disposed of at the USOR site. Therefore, it is not possible for me to form an opinion at this time, as to the hazardous nature of the waste materials, from IBEX, disposed of at the USOR site.

Larry's Bar-B-Q

141. I have reviewed the discovery records concerning the operations of Larry's Bar-B-Q ("Larry's BBQ") which were provided by counsel.

142. In the Defendants' Original Answer and Affirmative Defenses to Plaintiff's Second Amended Complaint, Larry's BBQ stated, "In response to paragraph 1869, Larry's Bar-B-Que denies that it generated waste streams disposed at the USOR Site, nor did waste allegedly generated by Larry's Bar-B-Que disposed at the USOR site, if any, contain any of the hazardous substances as described". Further, Larry's BBQ stated, "Plaintiff's CERCLA claims against Larry's Bar-B-Que in Counts I, II, and III should be barred because none of the alleged Larry's Bar-B-Que materials were 'hazardous substances' as that term is defined in CERCLA, § 101(14), 42 U.S.C. §§ 9601(14). If Larry's Bar-B-Que contributed any material to the USOR Site (specifically, 400 N. Richey Street), which Larry's Bar-B-Que denies, the material was not a hazardous substance, was biodegradable, would have already biodegraded, and therefore would not be present such as to require the incurrence of response costs."

143. In the Texas Alcohol and Beverage Commission database, Larry's Bar-B-Q Hwy 290 Inc. is the regulated entity for the facility located at 14191 Northwest Freeway in Houston, Harris County, Texas. The facility is described as a restaurant with food and alcohol service.

144. Waste streams generated by the facility included food wastes, spent grease, and food service trash, among others (30).

145. In my opinion, based on the Larry's BBQ discovery records that I reviewed, my knowledge and experience with grease trap and grease disposal operations carried out by companies like Larry's BBQ during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: chromium, copper, zinc, and polycyclic aromatic hydrocarbon ("PAH") compounds including anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among others. (23, 24).

146. Further, I understand that the waste streams of Larry's BBQ, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
147. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead and zinc, among other metals as contaminants of concern. Soil and sediment sampling in the areas of Vince Bayou adjacent to the USOR site indicated the presence of anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among others PAH compounds as contaminant of concern. (83).

Massey Industries, Inc.

148. I have reviewed the discovery records concerning the operations of Massey Industries, Incorporated ("Massey Industries") which were provided by counsel.
149. In the Defendants' Answers to Plaintiff's First Set of Interrogatories, Massey Industries admitted that "Massey had a minuscule amount of product disposed at the site, specifically 2,400 gallons and it was non-hazardous." Further, Massey Industries admitted that "Massey did not directly dispose of any materials on the site" (USOR site) and "actually hired AXYS Industrial Solutions, LLC ("AXYS") to handle the disposal of the material in question". In my opinion, the wastes generated by Massey Industries contained hazardous substances.
150. In the TCEQ Central Registry, Massey Industries is the regulated entity for the facility located at 7320 Avenue B in Houston, Harris County, Texas. The primary business for the facility is listed as an industrial chemical manufacturing plant, however machine tool manufacturing (NAICS Code 333512) is also listed as one of the facility operations. Massey Industries is registered under the Industrial and Hazardous Waste, Solid Waste Registration as a both a generator and transported of hazardous waste. The waste streams associated with its operations include dry solid grinding wastes, plant trash, office and shop maintenance wastes, uncontaminated construction debris, and used machine oil and coolant associated with grinding activities and machine maintenance oils (47).
151. In the discovery records provided by council (Bates No. 00009 – 00014), Massey Industries entered into an agreement with AYXS to provide disposal and other services of non-hazardous and hazardous wastes produced at the Massey Industries facility on January 5, 2004.
152. An analytical report of a composite sample of the grinding sludge from the Massey Industries facility was attached with the AXYS agreement. The analytical report indicated

concentrations of the following metals at levels greater than the method detection limits of the laboratory instrumentation: antimony, arsenic, barium, cadmium, chromium, lead, and nickel (3, 14).

153. Further, metal cutting and grinding operations such as the processes conducted at the Massey Industries facility would have generated cutting oils, coolants, degreasers, and solvents as waste streams (22, 30).
154. In my opinion, based on the Massey Industries discovery records that I reviewed, my knowledge and experience with machining and metal fabrication processes carried out by companies like Massey Industries during the time period in question, and references provided by EPA and other sources, the waste streams generated by Massey Industries listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, xylene, arsenic, barium, cadmium, chromium, lead, and nickel (22, 23, 28).
155. In addition, I understand that the waste streams of Massey Industries, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
156. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylene. (85, 86)
157. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified arsenic, chromium, lead and nickel, among other metals as contaminants of concern (83).

Mexico Lindo Market

158. I have reviewed the discovery records concerning the operations of the Mexico Lindo Market (“Mexico Lindo”) which were provided by counsel.
159. In Mexico Lindo Market’s Answer to Plaintiff’s Second Amended Complaint, Mexico Lindo stated, “MEXICO LINDO MARKET denies the allegations in Paragraph 2155. MEXICO LINDO MARKET denies it ever by contract, agreement, or otherwise arranged for disposal or treatment at the USOR Site of any waste containing hazardous substance

owned or possessed by MEXICO LINDO MARKET. MEXICO LINDO MARKET denies it ever by contract, agreement or otherwise arranged for transport for disposal or treatment at the USOR Site of any waste containing hazardous substance owned or possessed by MEXICO LINDO MARKET.”

160. Mexico Lindo operates a food market, butcher shop, and taqueria facility located at the 1508 Houston Blvd., Houston, Harris County, Texas. Waste streams generated by the facility included food wastes, spent grease, warehouse trash, and food service trash, among others (30).
161. In my opinion, based on the Mexico Lindo discovery records that I reviewed, my knowledge and experience with grease trap and grease disposal operations carried out by companies like Mexico Lindo during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: chromium, copper, zinc, and polycyclic aromatic hydrocarbon (“PAH”) compounds including anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among others. (23, 24).
162. Further, I understand that the waste streams of Mexico Lindo, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
163. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead and zinc, among other metals as contaminants of concern. Soil and sediment sampling in the areas of Vince Bayou adjacent to the USOR site indicated the presence of anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among other PAH compounds, as contaminants of concern. (83).

Monument Inn, Inc.

164. I have reviewed the discovery records concerning the operations of Monument Inn Incorporated (“Monument Inn”) which were provided by counsel.
165. In the Defendants’ Motion to Dismiss, Monument Inn stated, “Defendant Monument Inn, Inc. cannot be held liable under CERCLA or TSWDA because the existence of a hazardous substance was not established by Plaintiff and Plaintiff has not plead sufficient facts to establish Monument Inn caused Plaintiff to incur response costs. Plaintiff has not established

Monument Inn is a responsible person as provided by these Acts and therefore, Plaintiff's claims against Monument Inn should be dismissed."

166. In the TCEQ Central Registry, Monument Inn is registered as a full-service restaurant that operates a sewage treatment facility (NAICS Code 722110 and 22132). Monument Inn is associated with a wastewater permit for its facility located at 4406 Independence Parkway South, in LaPorte, Harris County, Texas (48).
167. On or about January 15, 2006, Monument Inn received notice of violations related to its wastewater discharge permit from the TCEQ. In the Notice of Violations, Monument Inn was alleged to have failed to comply with permitted effluent limitations, in violation of TEX. WATER CODE § 26.121(a), 30 TEX. ADMIN. CODE § 305.125(1), and Texas Pollutant Discharge Elimination System ("TPDES") Permit No. 13666001, Effluent Limitations and Monitoring Requirements. The enforcement action was resolved through an Agreed Order dated May 31, 2006, between the TCEQ and Monument Inn (49).
168. Shortly thereafter on February 28, 2006, Monument Inn allegedly by contract, agreement, or otherwise arranged with Earth America for disposal of at least 3,850 gallons of waste, described as "grease", at the USOR site. In their Answer and Affirmative Defenses to Plaintiff's Second Amended Compliant, Monument Inn repeatedly denied that the wastes contained hazardous substances.
169. As a full-service restaurant, the waste streams generated by the facility included food wastes, spent grease, packaging trash, and food service trash, among others (30). More likely than not, the waste streams would have also included cleaning compounds, disinfectant products, drain cleaners and solvents as well (30).
170. In my opinion, based on the Monument Inn discovery records that I reviewed, my knowledge and experience with grease trap and grease disposal operations carried out by companies like Monument Inn during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, vinyl chloride, xylene, chromium, copper, lead, zinc, and PAH compounds including anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among others. (23,,24).

171. Further, it is my opinion that Monument Inn knew that their waste streams contained hazardous substances. If the waste streams were truly non-hazardous as Monument Inn has claimed, then why would Monument Inn pay the additional costs associated with offsite treatment and disposal when the waste streams could have been discharged to the Houston Ship Channel under their wastewater discharge permit.
172. I understand that the waste streams of Monument Inn, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
173. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, trichloroethane, trichloroethylene, and vinyl chloride. (85, 86)
174. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead and zinc, among other metals as contaminants of concern. Soil and sediment sampling in the areas of Vince Bayou adjacent to the USOR site indicated the presence of anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among other PAH compounds, as contaminants of concern. (83).

Pearland Independent School District

175. I have reviewed the discovery records concerning the operations of Pearland Independent School District (“Pearland ISD”) which were provided by counsel.
176. In the Defendants’ Answer and Affirmative Defenses to Plaintiff’s Second Amended Complaint, Pearland ISD stated “PISD is not liable for any costs that result from the cleanup of materials or constituents that are not ‘hazardous substances’ as defined in Section 101(14) of CERCLA, 42 U.S.C. § 9601(14), or that are excluded petroleum products not within the purview of CERCLA.” Further Pearland ISD stated, “PISD is not liable under the TSWDA for any costs that result from the cleanup of a facility that is not a ‘solid waste facility’ or that result from the cleanup of materials or constituents that are not ‘hazardous substance[s],’ ‘hazardous waste,’ or ‘solid waste’ as defined by the TSWDA. TEX. HEALTH & SAFETY CODE ANN. § 361.003”. In my opinion, the waste streams generated by Pearland ISD were mixtures of wastes, which contained hazardous substances.

177. According to the Pearland ISD website, the Pearland ISD Food Service Department serves breakfast and lunch at all 17 campuses within the district with greater than 12,500 meals served daily by food service personnel.
178. In the Pearland ISD discovery records, Pearland ISD, is alleged, by contract, agreement, or otherwise, to have arranged with A-Affordable Vacuum Services for disposal of at least 78,600 gallons of waste, described as “grease”, at the USOR site.
179. As a full-service cafeteria, (NAICS Code 722310) the waste streams generated by the Pearland ISD facilities included food wastes, spent grease, packaging trash, and food service trash, among others (30). More likely than not, the waste streams would have also included cleaning compounds, disinfectant products, drain cleaners and solvents as well (30).
180. In my opinion, based on the Pearland ISD discovery records that I reviewed, my knowledge and experience with grease trap and grease disposal operations carried out by organizations like Pearland ISD during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, vinyl chloride, xylene, chromium, copper, lead, zinc, and PAH compounds including anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among others. (23, 24).
181. Further, I understand that the waste streams of Pearland ISD, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
182. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, trichloroethane, trichloroethylene, and vinyl chloride. (85, 86)
183. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead and zinc, among other metals as contaminants of concern. Soil and sediment sampling in the areas of Vince Bayou adjacent to the USOR site indicated

the presence of anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among other PAH compounds, as contaminants of concern. (83).

RectorSeal Corporation

184. I have reviewed the discovery records concerning the operations of RectorSeal Corporation (“RectorSeal”) which were provided by counsel.
185. In the Defendants’ Objections and Responses to Plaintiff’s First Set of Discovery Requests, RectorSeal stated “RectorSeal sent wastewater to the USOR Site that it generated from cleaning mixing tanks that it used to manufacture non-hazardous latex based compounds. RectorSeal will produce MSDS associated with the materials that were mixed that later needed to be rinsed from the mixing tanks. The primary component of RectorSeal’s mixture and therefore the wastewater stream (besides water) is a latex polymer emulsion manufactured by Air Products Polymers, L.P. known as AIRFLEX 600BP Emulsion, as well as Kaolinitic Clay and Iron Oxide, which are fillers”.
186. In the TCEQ Central Registry, RectorSeal is the regulated entity for the facility located at 2601 Spenwick Drive in Houston, Harris County, Texas (52). Operations conducted at the facility are classified as chemical manufacturing with an NAICS Code of 325520. The RectorSeal facility is affiliated with a stormwater permit with No Exposure Certification, which became effective on September 24, 2009.
187. RectorSeal’s Spenwick facility is registered as a small quantity generator of hazardous wastes under the Industrial and Hazardous Waste, Solid Waste Registration Program. Under this program, waste streams listed with the TCEQ include waste solvent cement, waste solvents, oily sludge, water and hydraulic fluid wastes, and plant trash among other outdated waste streams.
188. In the Solid Waste Registration for the facility, Texas Waste Code 00041132 was assigned to the waste stream described as waste water generated from equipment clean out. The Guideline for the Classification and Coding of Industrial and Hazardous Wastes, published by the I&HW Permits Section of the Texas Commission of Environmental Quality, lists this waste stream as Class 2 Industrial Waste composed of aqueous waste with high dissolved solids content. (84)
189. My review of the MSDS sheet for AIRFLEX 600BP, which was included with the documents produced by RectorSeal to the Plaintiffs, indicated that the polymer material used in the

mixing tanks contained trace levels of vinyl acetate monomer (0.3%) and a copolymer (40 to 60%) with a formulation that was undisclosed. The MSDS provided by RectorSeal stated that vinyl acetate monomer is listed as a probable human carcinogen by the International Agency for Research on Cancer (IARC).

190. Even without knowing the composition of the copolymer used in the emulsion, the latex polymer produced by RectorSeal in its mixing tanks contained hazardous substances including vinyl acetate monomer.
191. Based on the RectorSeal discovery records that I reviewed, my knowledge and experience with chemical manufacturing operations carried out by companies like RectorSeal during the time period in question, and the waste stream information provided by TCEQ, it is my opinion, more likely than not, that the mixing tanks, used for the latex emulsion described by RectorSeal, were also used for mixing other chemical formulations associated with hazardous substances such as waste solvent cement, waste solvents, and oily sludge, as well as water and hydraulic fluid wastes.
192. Wash water coming in contact with the waste streams listed above would have contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, methylene chloride, perchloroethylene, trichloroethylene, trichloroethane, and vinyl acetate monomer. (5, 22, 30).
193. Further, I understand that the waste streams of RectorSeal, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
194. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone. (85, 86)

REM Research Group Inc.

195. I have reviewed the discovery records concerning the operations of REM Research Group Incorporated (“REM Research”) which were provided by counsel.
196. In the Defendants’ First Amended Answer to Plaintiff’s Second Amended Complaint, REM Research stated “Any substances for which REM is allegedly responsible were not hazardous substances, were excluded petroleum products and/or are not otherwise substances within the

purview of CERCLA or TSWDA.” In my opinion, the wastes generated by REM Research contained hazardous substances.

197. In the TCEQ Central Registry, REM research is the regulated entity for a chemical product manufacturing facility (NAICS Code 325998) located at 2107 Longwood Drive in Brenham, Washington County, Texas (54). The facility is registered with the Industrial and Hazardous Waste, Solid Waste Registration Program as an industrial waste generator with waste streams including empty containers, empty drums, used absorbent materials, wastewater generated by the vibratory finishing process, lab pack wastes, floor sweepings, and plant trash.
198. The Brenham facility is also registered with the EPA as an Industrial and Hazardous Waste Generator (55). A query of EPA’s RCRAInfo database indicated the following waste codes were assigned to the REM Research facility: D001, D002, D003, D005, D006, D007, D018, and U219.
199. A laboratory analysis for a sample of the wastewater generated by REM Research’s vibratory finishing process was provided with REM Research’s Responses and Objections to Plaintiff’s First Set of Discovery Requests. From the laboratory analysis, chromium and nickel were detected in the wastewater sample.
200. In my opinion, based on the REM Research discovery records that I reviewed, my knowledge and experience with chemical manufacturing operations carried out by companies like REM Research during the time period in question, and references provided by EPA and other sources, the wastes generated by the facility contained one or more of the following substances, all of which are hazardous substances under CERCLA: barium, benzene, cadmium, chromium, and nickel (2, 5, 22, 30).
201. Further, I understand that the waste streams of REM Research, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
202. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone. (85, 86)
203. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified cadmium, chromium, and nickel, among other metals as contaminants of concern (83).

Shelton Services Inc.

204. I have reviewed the discovery records concerning the operations of Shelton Services Incorporated (“Shelton Services”) which were provided by counsel.
205. In the Defendants’ Motion to Dismiss, Shelton Services states “Without any documentation besides the two invoices attached as Exhibit A, Plaintiff simply concludes that it meets the elements for a cause of action under CERCLA without stating facts sufficient to support these conclusions. Accordingly, the Court should dismiss Plaintiff’s claims under CERCLA against Shelton Services for failure to state a claim upon which relief can be granted.”
206. According to their website, Shelton Services provides construction services for environmental projects and is licensed to operate in all 50 states. Shelton Services specializes in environmental response actions such as oil spill response, tank cleaning, remediation, and hydroblasting (10, 14, 22).
207. However, Shelton Services is not listed with any professional organizations.
208. In the TCEQ Central Registry, Shelton Services is not registered as a regulated entity.
209. A query of EPA’s Facility Registry Service does not identify a company or facility affiliated with the name of Shelton Services.
210. In my experience, operations and processes such as the services offered by Shelton Services on their website, generate waste streams, many of which contain hazardous substances (16, 22).
211. Unfortunately, no additional information has been produced by the Defendant as to the location or specific details on the process that generated the waste. Without further information, I am unable to form an opinion with respect to this waste stream at this time.

Silverado Senior Living Inc.

212. I have reviewed the discovery records concerning the operations of the Silverado Senior Living Incorporated (“Silverado”) which were provided by counsel.
213. In Silverado’s Motion for Summary Judgement, Silverado stated, “Even in the light most favorable to Plaintiff, there is no evidence that the entity listed in this record is “Silverado Senior Living, Inc.”, or that the grease contained any hazardous substances under CERLCA or the TSWDA.”
214. According to the Texas Department of Aging and Disability Services, Assisted Living Facility Directory, Silverado operates a senior and assisted-living facility located at the 22955 Eastex

Freeway in Kingwood, Montgomery County, Texas (56). Waste streams generated by food services operations at the facility included food wastes, spent grease, packaging wastes, and food service trash, among others (30). Health care operations at the facility, more likely than not, would have generated waste streams including cleaning compounds, disinfectant products, drain cleaners and solvents, among others as well (30).

215. In my opinion, based on the Silverado discovery records that I reviewed, my knowledge and experience with grease trap and grease disposal operations carried out by companies like Silverado during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: chromium, copper, zinc, and polycyclic aromatic hydrocarbon (“PAH”) compounds including anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among others. (23, 24).
216. Further, I understand that the waste streams of Silverado, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
217. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead and zinc, among other metals as contaminants of concern. Soil and sediment sampling in the areas of Vince Bayou adjacent to the USOR site indicated the presence of anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among other PAH compounds, as contaminants of concern. (83).

Southern Core Supply, Inc.

218. I have reviewed the discovery records concerning the operations of Southern Core Supply Incorporated (“Southern Core Supply”) which were provided by counsel.
219. In the Defendants’ Motion to Dismiss, Southern Core Supply stated, “In order to plead that Southern Core was an arranger, Plaintiff must also plead facts that support that the materials, which were the subject of the alleged disposal, treatment, or transportation, were ‘hazardous substances’ within the meaning in CERCLA. In its Second Amended Complaint, Plaintiff baldly points to 62,600 gallons of ‘oily water’ and ‘oily waste water’ containing ‘hazardous substances’, which Plaintiff claims Southern Core arranged to be disposed of, treated at, or transported to the USOR Site”.

220. Further, in Southern Core Supply, Inc.'s Objections and Responses to Plaintiff's First Set of Interrogatories, Request for Production and Request for Admissions, Southern Core Supply stated, "SCS's facility is an industrial classification. SCS is a recycling facility, which involves dismantling motors and transmissions. The nonhazardous oily water that sometimes results from the dismantling was collected in a tank and removed from SCS's facility through the use of certified waste transportation companies". In my opinion, the wastes generated by Southern Core Supply contained hazardous substances.
221. In the TCEQ Central Registry, Southern Core Supply is listed as the regulated entity for a facility located at 7911 Fallbrook Dr. in Houston, Harris County, Texas (58). The facility is classified under SIC Codes 5015 and 5093 as a used motor vehicle parts distributor and a scrap and waste materials handler. Southern Core is affiliated with a stormwater discharge permit for its facility (57).
222. Waste streams generated as a part of the auto salvaging operations conducted by Southern Core Supply would have included waste oil, transmission fluids, engine coolants, solvents, degreasers, cleaning products, sludges, and used batteries (3, 4, 7).
223. In my opinion, based on the Southern Core Supply discovery records that I reviewed, my knowledge and experience with auto salvaging operations carried out by companies like Southern Core Supply during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, trichloroethane, copper, chromium, lead, and zinc (4, 7, 30,).
224. As indicated in Southern Core Supply's responses to the Plaintiff's interrogatories, spent automobile fluids were collected in a tank for off-site disposal. Waste oil, spent automobile fluids, and any stormwater coming in contact with the waste streams from Southern Core Supply's operations, would have contained some, if not all, of the hazardous substances contained in the waste streams identified above. (4, 7, 23).
225. Further, it is my opinion that Southern Core Supply knew that its "nonhazardous oily water" contained hazardous substances. If the waste water was truly nonhazardous as Southern Core Supply has claimed, then why would Southern Core Supply pay for the additional expense of

transport and disposal for waste water that could be discharged under the stormwater discharge permit for the facility.

226. I understand that the waste streams of Southern Core Supply, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
227. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, methyl ethyl ketone dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, and trichloroethane. (85, 86)
228. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified copper, chromium, lead and zinc, among other metals as contaminants of concern (83).

Sunbelt Rentals, Inc.

229. I have reviewed the discovery records concerning the operations of Sunbelt Rentals Incorporated (“Sunbelt Rentals”) which were provided by counsel.
230. In the Defendants’ Memorandum in Support of Motion to Dismiss, Sunbelt Rentals stated that the Plaintiff “alleges that the ‘waste generated’ by NationsRent are described on USPR Site records as ‘grit’ and ‘contained some or all of the following hazardous substances: acetone, benzene, chromium, ethyl benzene, manganese, methyl ethyl ketone, nickel, toluene, trichloroethane, xylenes and/or zinc.’ (*Id.* at ¶3039). Plaintiff fails to describe how it came up with this conclusion. Plaintiff further alleges NationsRent “arranged” with transporter Earth America to transport NationsRent’s ‘waste streams to the USOR Site’ (without explaining how). (*Id.* at ¶3040).” In my opinion, the wastes generated by Sunbelt Rentals contained hazardous substances.
231. In the TCEQ Central Registry, Sunbelt Rentals is the regulated entity for a commercial equipment rental and leasing facility (NAICS Code 532412) located at 2626 Bayport Blvd in Seabrook, Harris County Texas (59). The facility also operates as a maintenance and repair shop (NAICS Code 811310) and a fleet refueling center (NAICS Code 424720)
232. Operations conducted by SunBelt Rentals at their Seabrook facility would also have included truck maintenance, mechanical repair, metal working, painting, vehicle cleaning, and used oil handling. Waste streams generated as a result of the facility operations would have included

metal grindings, floor sweepings, waste oil, transmission fluids, engine coolants, solvents, degreasers, cleaning products, paint wastes, sludges, grit, and used batteries (10, 13, 20, 28).

233. In my opinion, based on the Sunbelt Rentals discovery records that I reviewed, my knowledge and experience with metal-working, vehicle maintenance, repair and refueling operations carried out by companies like Sunbelt Rentals during the time period in question, and references provided by EPA and other sources, the wastes produced by the processes listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, trichloroethane, chromium, copper, lead, nickel, and zinc (13, 20, 23, 30).

234. Used oil produced as a result of these processes at the Sunbelt Rentals facility would have contained some, if not all, of the hazardous substances listed above. (23, 25, 28).

235. Further, it is my opinion that the hazardous substances in these waste streams, more likely than not, would have been washed or would have drained into the sumps and grit traps at the facility. The grit trap wastes would have contained some, if not all, of the hazardous substances contained in the waste streams listed above (28, 29).

236. I understand that the waste streams of Sunbelt Rentals, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.

237. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, and trichloroethane. (85, 86)

238. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

Sunbelt Steel Texas Inc.

239. I have reviewed the discovery records concerning the operations of Sunbelt Steel Texas Incorporated (“Sunbelt Steel Texas”) which were provided by counsel.

240. In the Defendants’ Memorandum of Law in Support of Motion to Dismiss, Sunbelt Steel Texas stated “Despite its allegations regarding the “release of hazardous substances” and

“contaminated liquids” at the USOR Site, (*Id.* at ¶¶22 and 39), Plaintiff offers no facts about Defendant or how it allegedly contributed to the contamination of the USOR Site.” Additionally, Sunbelt Steel Texas stated, “Plaintiff further alleges that the “waste generated” by Sunbelt Steel is “used oil oily water” that contained some or all of the following hazardous substances: acetone, benzene, chromium, copper, dichlorobenzene, dichloroethylene, lead, methyl ethyl ketone, methylene chloride, nickel, perchloroethylene, toluene, trichloroethane, trichloroethylene, xylenes and/or zinc. (*Id.* at ¶3045). Plaintiff fails to describe how it came up with this conclusion.”

241. According to their website, Sunbelt Steel Texas operates from a facility located at 5311 Clinton Drive in Houston, Harris County, Texas.
242. However, in the TCEQ Central Registry, the address for Sunbelt Steel Texas is registered with the Earle M Jorgensen Company (60, 61). The facility at 5311 Clinton Drive operates as metal fabrication shop (NAICS Code 331210) and warehousing facility (NAICS Code 493110). The facility is registered as a generator of industrial waste under the Industrial and Hazardous Waste, Solid Waste Registration Program.
243. As a metal fabrication facility, the processes conducted by Sunbelt Steel Texas would include metal cutting, grinding, turning, honing, milling, deep hole drilling, and heat treating, among others. The waste streams generated by Sunbelt Steel Texas as a result of these processes would include, spent cutting oils, used metalworking fluids, solvents, degreasers, wastewater and sludges, among others (3, 6).
244. In the Solid Waste Registration for the facility, only one registered waste stream is listed. The waste stream is comprised of the spent fluids and metal shavings in the cleanout of the containment area surrounding the hydraulic metal working equipment (3).
245. Further, the facility enrolled in the Voluntary Clean-up Program with the TCEQ in December 2004. The initial investigation of the contaminated areas identified benzene, methyl tert-butyl ether, volatile organic compounds, and petroleum hydrocarbon compounds as contaminants of concern.
246. In my opinion, based on the Sunbelt Steel Texas discovery records that I reviewed, my knowledge and experience with metal fabrication processes carried out by companies like Sunbelt Steel Texas during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following

substances, all of which are hazardous substances under CERCLA: acetone, benzene, dichloroethylene, ethyl benzene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, xylenes, chromium, copper, lead, nickel, and zinc (3, 6, 22, 30).

247. Further, it is also my opinion that wastewater and sludges in contact with these waste streams would, more likely than not, contain the same hazardous substances.
248. I understand that the waste streams of Sunbelt Steel Texas, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
249. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylenes. (85, 86)
250. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

Syntech Chemicals, Inc.

251. I have reviewed the discovery records concerning the operations of Syntech Chemicals Incorporated (“Syntech Chemicals”) which were provided by counsel.
252. In the Defendants’ Motion to Dismiss, Syntech Chemicals stated “While Plaintiff references the purported substance as a ‘hazardous substance’, there is no evidence provided by Plaintiff that shows it as hazardous. The documents produced by Plaintiff label the waste as non-hazardous and no profile sheet which would identify the waste as non-hazardous has been produced by Plaintiff. Plaintiff offer no other evidence of facts supporting its allegations that the alleged substance meets any of the definitions of a hazardous substance under federal or state statutes or regulations, including CERCLA and the TSWDA.”
253. In the TCEQ Central Registry, Syntech Chemicals is registered as the regulated entity for the facility located at 14822 Hooper Road in Houston, Harris County, Texas (62). The facility operates as a chemical products manufacturing facility (NAICS Code 325988) with a water quality permit for stormwater discharge.

254. The Syntech Chemicals facility is registered as a conditionally exempt small quantity generator under the Industrial and Hazardous Waste, Solid Waste Registration Program with waste streams registered as contaminated storm water, used oil, spent carbon, wastewater containing sodium sulfate, wastewater containing amines/aldehydes, and plant trash (62).
255. Based on the air permits issued to the facility, many of the manufacturing processes conducted at the Syntech Chemicals facility involve the production of complex organic molecules including organic pigments and fillers, among other products (8, 9).
256. To date, Syntech Chemicals has not disclosed any of the chemical processes conducted at the facility nor have they provided any information on the reagents, intermediates, or byproducts associated with the individual processes. Without further information on the operations of the Defendant, I am unable to form an opinion with respect to hazardous nature of the wastes disposed of at the USOR Site at this time.

Taylor Press Products Co.

257. I have reviewed the discovery records concerning the operations of Taylor Press Products Company (“Taylor Press”) which were provided by counsel.
258. In the Defendants’ Motion to Dismiss, Taylor Press stated “Plaintiff’s petition fails to allege facts sufficient to show that any alleged material sent to the USOR Site by Taylor Press was in fact a hazardous substance. As previously mentioned, Plaintiff’s Petition alleges that Taylor Press generated and deposited at the USOR Site, waste streams that included ‘non-hazardous waste water’ and ‘non regulated material’.”
259. Further, in the Defendant’s Objections and Responses to Plaintiff’s First Set of Discovery Requests, Taylor Press included the Declaration of Bradford Werner and Taylor Press’ Wastewater Discharge Permit to the City of Jarrell, Texas as part of its response to further confirm the non-hazardous nature of the waste generated by Taylor Press.
260. According to their website, Taylor Press operates a metal fabrication facility located at 13675 Interstate 35 in Jarrell, Williamson County, Texas. Services offered at the Taylor Press facility include metal stamping, fabrication and welding services, painting and coating, and tool building (NAICS Code 336370).
261. In the TCEQ Central Registry, Taylor Press and its facility address are not registered as a regulated entity. Likewise, Taylor Press is not registered in EPA’s Facility Registry Service.

262. As a metal fabrication facility, the processes conducted by Taylor Press would include metal cutting, grinding, bending, turning, stamping, surface preparation, and surface coating, among others. The waste streams generated by Taylor Press as a result of these processes would include, spent cutting oils, used metalworking fluids, solvents, degreasers, waste surface coating products, wastewater and sludges, among others.
263. In the Declaration of Bradford Werner, Mr. Werner indicated that Taylor Press uses the Aquence/Bonderite system for coating metal parts. Additionally, Mr. Werner stated, “The Bonderite process does not emit VOC’s or contain hazardous chemicals.” However, later in his declaration, Mr. Werner admitted, “The process is waterborne that depends on chemical reactions between a ferrous component to be coated and the coating solution. As can be seen from the description of the process, the hydrofluoric acid we purchase is further extremely diluted with water as part of the paint process.”
264. Hydrofluoric acid is a hazardous substance under 40 CFR 302.4, which directly contradicts Mr. Werner’s declaration that the Bonderite process does not contain hazardous chemicals. In addition, hydrofluoric acid is a listed hazardous waste (U-134) under 40 CFR 261.33 due to its corrosivity and toxicity.
265. Further, as Mr. Werner indicated, the surface of the ferrous materials is reacted with hydrofluoric acid, dissolving the iron and any impurities in the metal, from the surface of the component to be treated. The dissolved metal ions and impurities are removed with the wastewater from Stages 1 and 2 of the Bonderite process.
266. A review of the Wastewater Discharge Permit for the Taylor Press facility confirms that Taylor Press was discharging the wastewater from the coating process to the POTW in the City of Jarrell. However, under the Special Conditions of the permit (Part V Section 2(b)), the permit clearly stated, “Wastes from Stages 1 and 2 of the Aquence 866 coating process may not be discharged in to the POTW.”
267. In my opinion, based on the Taylor Press discovery records that I reviewed, the waste streams generated by Taylor Press as a result of these processes would include metal fragments, spent cutting oils, used metalworking fluids, solvents, degreasers, wastewater and sludges, among others.
268. Further, it is my opinion, based on my knowledge and experience with metal fabrication and coating processes carried out by companies like Taylor Press during the time period in

question and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, dichloroethylene, ethyl benzene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylenes. (3, 6, 30).

269. Furthermore, steel is a homogeneous mixture containing other elements such as carbon, chromium, copper, lead, manganese, nickel, vanadium, and zinc. As a result of the dissolution process associated with Stage 1 of the surface coating process, the wastewater generated by Taylor Press would have contained some, if not all, of the following hazardous substances: chromium, copper, lead, nickel, and zinc. (3, 6).
270. Further, I understand that the waste streams of Taylor Press, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
271. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylenes. (85, 86)
272. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

Texas Couplings, L.P.

273. I have reviewed the discovery records concerning the operations of Texas Couplings, L.P., (“Texas Couplings”) which were provided by counsel.
274. In the TCEQ Central Registry, Texas Couplings is registered as the regulated entity for a fabricated metals and coatings facility (NAICS Code 332999) located at 1835 Holzworth Road in Spring, Harris County, Texas. The facility is affiliated with an industrial water quality permit for stormwater runoff. The Texas Couplings facility is also registered as a small quantity generator under the Industrial and Hazardous Waste, Solid Waste Registration program (64).
275. Operations conducted at the facility included metalworking, cutting, grinding, turning, degreasing, surface preparation, and coating processes, among others. Waste streams listed

on the facility's Notice of Registration included wash water from washing iron parts, filter cake and solids, phosphate sludge, neutralized rinse water from rust removal, dry paint debris, caustic wash water, and spent solvents (14).

276. In the RCRAInfo database, Texas Couplings is identified as a small quantity hazardous waste generator with the waste codes D001, D002, D006, D007, D008, D018, D035, D039, and D040 (65). The hazardous substances contained in these waste codes include cadmium, chromium, lead, benzene, methyl ethyl ketone, tetrachloroethylene, and trichloroethylene.
277. In my opinion, based on the Texas Couplings discovery records that I reviewed, my knowledge and experience with metal fabrication and coating processes carried out by companies like Texas Couplings during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, dichloroethylene, ethyl benzene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, xylenes, cadmium, chromium, copper, lead, nickel, and zinc. (3, 5, 22)
278. The wastewater and sludges produced by the operations of the facility would, more likely than not, have contained some, if not all, of the hazardous substances listed above. (3, 5, 11).
279. Further, I understand that the waste streams of Texas Couplings, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
280. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylenes. (85, 86)
281. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

Tex-Tube Co.

282. I have reviewed the discovery records concerning the operations of the Tex-Tube Company ("Tex-Tube") which were provided by counsel.

283. In the Defendants' Answer to the Plaintiff's First Amended Complaint, Tex-Tube stated, "Defendant would show that it only arranged for the disposal of non-hazardous materials, and that, as such, it is not liable to the Plaintiff." In my opinion, the wastes generated by Tex-Tube contained hazardous substances.
284. In the TCEQ Central Registry, Tex-Tube is registered as the regulated entity for a fabricated metals and coatings facility (NAICS Code 331210) located at 1503 N. Post Oak Road in Houston, Harris County, Texas (66, 67). The facility is registered as a conditionally exempt small quantity generator under the Industrial and Hazardous Waste, Solid Waste Registration program.
285. As a metal fabrication facility, the processes conducted by Tex-Tube would have included metalworking, cutting, grinding, turning, degreasing, surface preparation, and coating processes, among others. The waste streams generated by Tex-Tube and listed in the Notice of Registration for the facility included non-halogenated, spent, parts washing fluid, mill scale, coating resins and absorbable mixtures, scrap metal, wastewater from mill scale cleanup, used oil filters, lumber and wood debris, oily wastewater, and numerous other inactive or one-time use waste streams such as spent solvents, degreasers, wastewater and sludges, among others (14).
286. In the RCRAInfo database, Tex-Tube is identified as a small quantity hazardous waste generator with the waste codes D001, D002, D004, D005, D006, D007, D008, D009, D010, D018, D027, D028, D035, D036, D039, and D040. The hazardous substances contained in these waste codes include arsenic, barium, cadmium, chromium, lead, mercury, selenium, benzene, 1,4-dichlorobenzene, methylene chloride, methyl ethyl ketone, nitrobenzene, tetrachloroethylene, and trichloroethylene.
287. In my opinion, based on the Tex-Tube discovery records that I reviewed, my knowledge and experience with metal fabrication and coating processes carried out by companies like Tex-Tube during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, dichloroethylene, ethyl benzene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, xylenes, arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc (3, 6, 22, 30).

288. Further, it is also my opinion that wastewater and sludges generated by the facility processes would, more likely than not, contain some, if not all, of the same hazardous substances.
289. I understand that the waste streams of Tex-Tube, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
290. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylenes. (85, 86)
291. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

URS Corporation

292. I have reviewed the discovery records concerning the operations of URS Corporation ("URS Corp.") which were provided by counsel.
293. In the Defendants' Motion to Dismiss, URS Corp. stated "Plaintiff has not pleaded facts that show the purported substance that URS arranged for disposal or treatment and/or arranged with a transporter for transport for disposal or treatment is hazardous. In fact, the only apparent bases for Plaintiff's allegations against URS are found in invoices and manifests expressly stating that the alleged substance is non-hazardous."
294. In the TCEQ Central Registry, URS Corp. is registered as an affiliated entity with numerous project locations across the state. However, the address provided by URS Corp. in the Defendant's Objections and Responses to Plaintiff's First Set of Request for Production is associated with a former leaking underground storage tank located at 7026 Lawndale in Houston, Harris County, Texas (68).
295. From my understanding of the documents provided by the Defendant, URS Corp. was engaged by the TCEQ Remediation Division to install and sample four monitoring wells as well as conduct an active pumping test to classify the groundwater resource at the facility.
296. Prior to the generation of waste from field activities, a representative of URS Corp. completed a Generator Liquid Profile Sheet with USOR and indicated that laboratory analytical reports were available to provide additional information to characterize the waste. Unfortunately, the analytical reports were not provided with the Defendant's discovery response.

297. In my opinion, based on the URS Corp. discovery records that I reviewed, my knowledge and experience with environmental remediation operations carried out by companies like URS Corp. during the time period in question, and references provided by EPA and other sources, the soil cuttings and wastewater generated at the facility would, more likely than not, have contained one or more of the following substances, all of which are hazardous substances under CERCLA: benzene, ethyl benzene, toluene, and xylenes (23, 30).
298. Further, I understand that the waste streams of URS Corp., which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
299. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: benzene, toluene, and xylene. (85, 86)

Western Oilfields Supply Co.

300. I have reviewed the discovery records concerning the operations of Western Oilfields Supply Company (“Western Oilfields”) which were provided by counsel.
301. In the Defendants’ Motion to Dismiss, Western Oilfields claimed “Plaintiff fails to allege facts to support the required elements of its causes of action and provides no evidence to demonstrate that the waste allegedly arranged or generated by Western Oilfields contained *any* hazardous substances or qualifies as solid waste, or that waste allegedly transported was like that found at the USOR Site.” In my opinion, the wastes generated by Western Oilfields contained hazardous substances.
302. In the TCEQ Central Registry, Western Oilfields is registered as the regulated entity for the facility located at 2712 Independence Parkway S. in LaPorte, Harris County, Texas (69). Western Oilfields, doing business as Rain for Rent, operated as an industrial machinery and equipment merchant wholesaler (NAICS Code 423830) and general freight trucking company (NAICS Code 484110). Western Oilfields is registered as a generator of hazardous wastes under the Industrial and Hazardous Waste, Solid Waste Registration program with one active waste stream listed in their Notice of Registration (69).
303. Operations conducted at the Western Oilfields facility included cleaning and repair of equipment, painting, parts cleaning, degreasing processes, and general maintenance, among

others. Waste streams generated as a result of facility operations would have included spent non-halogenated solvents, degreasing compounds, and paint waste, among others(3, 4, 7, 10).

304. In my opinion, based on the Western Oilfields discovery records that I reviewed, my knowledge and experience with oilfield construction equipment processes carried out by companies like Western Oilfields during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, ethyl benzene, toluene, xylene, and methyl ethyl ketone. (10, 16, 30).
305. Wash water coming in contact with the waste streams generated by Western Oilfields would, more likely than not, have contained some, if not all, of the hazardous substances listed above (23).
306. Further, I understand that the waste streams of Western Oilfields, which other evidence shows were disposed of at the USOR site, would have contributed to the wastes that were present at the USOR site.
307. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone. (85, 86)

Berg Environmental Services, Inc.

308. I have reviewed the discovery records concerning the operations of Berg Environmental Services, Incorporated (“Berg Environmental”) which were provided by counsel.
309. In the Defendants’ Motion to Dismiss, Berg Environmental stated “To be clear, Berg environmental does not dispute that it transported ‘non-regulated material’ and ‘non-regulated waste water.’ What it does dispute is that such materials and waste water contained the hazardous substances that Plaintiff blindly alleges it did. At most Plaintiff provides evidence that *some* non-regulated material ‘may contain’ some of the chemicals deemed hazardous.”
310. In the TCEQ Central Registry, Berg Environmental (70) is registered as a regulated entity that operates as transporter of hazardous and non-hazardous waste (NAICS 484110) and provides other miscellaneous waste management services (NAICS Code 562998).
311. Based on the Berg Environmental discovery records that I reviewed, it is my understanding that Berg Environmental transported wastewater from the Taylor Press facility to the USOR site.

312. It is my opinion that the wastewater generated by Taylor Press would have contained some, if not all, of the following hazardous substances: chromium, copper, lead, nickel, and zinc. Further, it is my opinion, more likely than not, that hazardous substances associated with the spent cutting oils, used metalworking fluids, solvents, and degreasers would also be contained in the wastewater from the Taylor Press facility.

313. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone. (85, 86)

314. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

Environmental Earth-Wise, Inc.

315. I have reviewed the discovery records concerning the operations of Environmental Earth-Wise, Incorporated (“EEW”) which were provided by counsel.

316. In its Original Answer and Affirmative Defense, EEW stated “EEW admits that it arranged for disposal of waste at the USOR site, but EEW is without sufficient information or knowledge to admit or deny the specific quantities or companies for whom the waste was delivered to the site.” Further, EEW claimed, “EEW denies the allegation in Paragraph 790 that the waste materials delivered by EEW contained hazardous substances.”

317. In the TCEQ Central Registry, EEW is registered as an environmental consulting firm (NAICS Code 541620) that offers hydro-excavation vacuum truck services. EEW is also registered as a sludge transporter after August 2005 (71).

318. Based on the EEW discovery records that I reviewed, it is my understanding that EEW transported wastewater from the Tex-Tube facility and for Western Oilfields d/b/a Rain for Rent, among others, to the USOR site.

319. It is my opinion that the wastewater and sludges generated by the Tex-Tube facility would, more likely than not, have contained acetone, benzene, dichloroethylene, ethyl benzene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, xylenes, arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc

320. Further, it is my opinion that wastewater generated by Western Oilfields would, more likely than not, have contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, ethyl benzene, toluene, xylene, and methyl ethyl ketone. (22, 23, 30).
321. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylenes. (85, 86)
322. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

E-Transport Carriers

323. I have reviewed the discovery records concerning the operations of E-Transport Carriers (“E-Transport”), formerly known as Sunteck Transport Carriers, Inc., which were provided by counsel.
324. In the Defendant’s Amended Motion to Dismiss, E-Transport stated “The now Third Amended Complaint concedes much of the material allegedly transported to the USOR Site by ETC was ‘nonhazardous.’ The USOR Group’s failure to plead the amount of hazardous materials separately from the nonhazardous material allegedly transported by ETC renders the Amended Complaint vague, and ambiguous with respect to the allegations against ETC.”
325. In the Federal Motor Carrier Safety Administration’s SAFER website, E-Transport is listed as a carrier/broker for interstate hauling with capabilities for the transport of chemicals (73).
326. Based on the E-Transport discovery records that I reviewed, it is my understanding that E-Transport hauled a single load of wastewater from the Sachem facility, located at 821 Woodward Street in Austin, Travis County, Texas, to the USOR site.
327. In the TCEQ Central Registry, Sachem, Inc. is a regulated entity that operates a specialty chemicals manufacturing facility (NAICS Code 325199) and is registered as a large quantity generator under the Industrial and Hazardous Waste, Solid Waste Program (8, 72).
328. In its Notice of Registration, the Sachem facility lists an active waste stream (Texas Waste Code 02101021) that is composed of an aqueous solution of ethylene glycol with > 50% water

(72). The form code (102) within the Texas Waste Code signifies the presence of additional toxic organic chemicals at low levels (84).

329. On the waste manifest included with the E-Transport discovery records, the waste code, listed in the right hand column adjacent to the waste description, is written as TX ID 02101021, the same as the Texas waste code ascribed to the waste stream in Sachem's Notice of Registration (84). Furthermore, the waste description matches the description of the waste stream in Sachem's Notice of Registration.

330. It is my opinion that the wastewater generated by the Sachem facility and transported by E-Transport would, more likely than not, have contained metals such as chromium, copper, lead, nickel, and zinc in addition to ethylene glycol and other toxic organic compounds.

331. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

Firebird Bulk Carriers, Inc.

332. I have reviewed the discovery records concerning the operations of Firebird Bulk Carriers, Incorporated ("Firebird") which were provided by counsel.

333. In the Defendant's Motion to Dismiss, Firebird claimed "To meet the 'persons covered' requirement under CERCLA, 42 U.S.C. § 9607(a)(3), the Plaintiff must plead facts to support the substance is a 'hazardous substance'. The substance identified in the documents central to Plaintiff's claims, describes the substance as 'non-hazardous'." Further, Firebird claimed, "Accepting this document as authentic, and considering it in the light most favorable to the Plaintiff, The Complaint should be dismissed on its face because its *prima facie* evidence establishes that the substance does not meet the standards outlined in CERCLA."

334. In the TCEQ Central Registry, Firebird is registered as a general freight trucking firm without storage (NAICS Code 484110) since February 1992 (74).

335. Based on the Firebird discovery records that I reviewed, it is my understanding that Firebird transported wastewater from the Bredero Price Co. facility, for Contractor Technology Industries, LLC, ProWaste Inc., and for Texas International Box Company & Rentals, Inc., among others, to the USOR site.

336. I reviewed twelve waste manifests, included with the Firebird discovery records, for waste shipment from the Bredero Price facility at 4501 Knapp Road in Pearland, Harris County,

Texas to the USOR site. Each of the manifests was labelled with the waste code number 00361191, which corresponds with a waste stream with the same number in the Notice of Registration for the Bredero Price facility (84). The waste stream description in the Notice of Registration identifies the waste stream as T-3 Heat Transfer compound (discarded, outdated or offspec product) Inorganic liquid from pipe coating process. Without knowing the composition of the heat transfer compound, I am unable to make any determination as to the hazardous nature of the waste generated by the Bredero Price facility and transported by Firebird to the USOR site at this time.

337. With respect to the former Contractor Technology Industries, LLC, I am unable to access the Notice of Registration for the facility (77), though I have reviewed the 68 manifests for waste that was transported by Firebird. Most of the waste (60 truckloads) were classified with waste code 0045191, which corresponds to other inorganic sludges (84). Two of the waste loads were classified as waste code 00041011 and described as dilute aqueous waste with low solvent content (84). However, there were six waste loads that were described as “Waste, Corrosive Liquids, NOS (sodium hydrosulfide, sodium sulfide) 8, UN 1760 PGII with the waste code D002 0001110H. These waste codes and United States Department of Transportation (“USDOT”) labels signify a highly corrosive, caustic material. In my opinion, the caustic waste qualifies as a hazardous substance based on its corrosivity alone. The sludges, more likely than not, would have contained one or more of the following metals: arsenic, cadmium, lead, and zinc, all of which are hazardous substances.
338. In the TCEQ Central Registry, ProWaste, Inc. is affiliated with a recycled materials facility (NAICS Code 423930) located at 8010 Needlepoint Road in Baytown, Harris County, Texas. The facility is registered with the name of United Environmental Services, LLC as a conditionally exempt small quantity generator under the Industrial and Hazardous Wastes, Solid Waste Program (75).
339. I have reviewed five waste manifests from ProWaste with the waste code listed as 00032051. The same waste code is listed as an active waste stream in the Notice of Registration for the Needlepoint Road facility (84). The waste stream description in the Notice of Registration identifies the waste as an oil-water emulsion or mixture and cleaning rinsate generated by oil recovery and cleaning processes. Unfortunately, without further information about the

recovery process or the emulsion mixture, I am unable to form an opinion as to the hazardous nature of this waste stream at this time.

340. In the TCEQ Central Registry, Texas International Box Company & Rentals, Inc. is the regulated entity for a waste management services facility (NAICS Code 562998) located at 15335 Market Street in Channelview, Harris County, Texas (76). The facility is registered as a large quantity generator under the Industrial and Hazardous Wastes, Solid Waste Program. Waste streams generated by the operations of the facility include acidic aqueous wastes, caustic aqueous wastes, oil and metals contaminated sludge, rinsewater and wastes from cleaning boxes that contained hazardous wastes, spent potassium hydroxide, and oil contaminated wastewater (10).
341. For Texas International Box Company & Rentals, Inc., I have reviewed the waste manifests associated with the waste disposal of liquids with a waste code that does not correspond with the facility Notice of Registration (84). At this time, I do not have sufficient information to form an opinion as to the hazardous nature of the wastewater generated by Texas International Box Company & Rentals, Inc., and transported by Firebird for disposal at the USOR site.
342. With respect to Firebird, it is my opinion that some of the wastewater and sludges generated by Contractor Technology Industries, LLC would, more likely than not, have contained caustics and metals such as arsenic, cadmium, lead, and zinc. For the remaining waste streams transported by Firebird, I am unable to form an opinion at this time due to lack of necessary information.

Metro Grease Services, LLC

343. I have reviewed the discovery records concerning the operations of Metro Grease Services, LLC (“Metro Grease”) which were provided by counsel.
344. In the Defendants’ Answer and Affirmative Defenses to the Plaintiff’s Third Amended Complaint, Metro Grease stated “Metro Grease admits that it transported the non-hazardous grease by-product to the USOR Site on behalf of Allison Enterprises and Grease Recyclers Co-op as alleged in Paragraph 1699, but denies the remaining allegations in this paragraph.”
345. In the TCEQ Central Registry, Metro Grease is registered as a sludge transporter (NAICS 562998) that provides removal and recycling services for used cooking oils.

346. Based on the Metro Grease discovery records that I reviewed, it is my understanding that Metro Grease transported waste oils from Grease Recyclers Coop to the USOR site for disposal.
347. It is my opinion based on my knowledge and experience with grease trap and grease disposal operations carried out by companies like Grease Recyclers Coop during the time period in question, and references provided by EPA and other sources, that the waste oils generated by Grease Recyclers Coop would have contained some, if not all, of the following hazardous substances: chromium, copper, zinc, and polycyclic aromatic hydrocarbon (“PAH”) compounds including anthracene, fluorene, fluoranthene, naphthalene, phenanthrene, and benzo(a)pyrene, among others. (23, 24, 28).
348. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, toluene, xylene, and methyl ethyl ketone. (85, 86)
349. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

T&L Environmental Services, Inc.

350. I have reviewed the discovery records concerning the operations of T&L Environmental Services, Incorporated (“T&L Environmental”) which were provided by counsel.
351. In the Defendants’ Motion to Dismiss, T&L Environmental stated “Further and independently, the Phase One Discovery evidence, as well as the documents relied upon by Plaintiff in its complaint, only show that the waste being deposited at the site in question was merely non-volatile, non-hazardous organic waste—here, rainwater from a UTMB collection area—that does not fall under the purview of CERCLA or TSWDA.”
352. In the TCEQ Central Registry, T&L Environmental is affiliated with T&L Lease Services Inc., which operates a fleet refueling operation at 427 E South Street in Alvin, Brazoria County, Texas (78).
353. Based on the T&L Environmental discovery records that I reviewed, it is my understanding that T&L Environmental transported organic wastewater at the request of Eagle Construction Co. from a location listed as UTMB to the USOR site for disposal.

354. To date, T&L Environmental has not disclosed any further information regarding the location where the waste was generated nor any details as to how the waste was produced. Without further information on the waste generation process, I am unable to form an opinion with respect to hazardous nature of the wastes disposed of at the USOR Site at this time.

Texas Water Management LLC

355. I have reviewed the discovery records concerning the operations of Texas Water Management, LLC (“Texas Water Management”) which were provided by counsel.

356. In the Defendants’ Original Answer and Affirmative Defenses to Plaintiff’s Third Amended Complaint, Texas Water Management stated “Defendant denies all allegations regarding Texas Water Management in Paragraph 2907, and specifically denies that it is liable as an arranger or generator of materials containing hazardous substances or as a transporter of hazardous substances.” Further Texas Water Management stated, “Plaintiff’s claims are barred because any substances for which Defendant is allegedly responsible were not hazardous substances, were excluded substances, were excluded petroleum products, and/or or otherwise were not within the purview of CERCLA or the TSWDA. Plaintiff’s CERCLA claims against Defendant should be barred because none of the alleged Defendant materials were “hazardous substances” as that term is defined in CERCLA, § 101(14), 42 U.S.C. § 9601(14).

357. In the TCEQ Central Registry, Texas Water Management is registered as a regulated entity that operates as general freight trucking organization (NAICS 484110). Texas Water Management is also registered as a sludge transporter (79).

358. Based on the Texas Water Management discovery records that I reviewed, it is my understanding that Texas Water Management transported wastes and wastewater for Estes Express Lines, from CITGO Petroleum Corp., from the Pick A Part Auto Wrecking, LP facility, from the Saw Pipes facility, and for USAg Recycling Inc. to the USOR site.

359. As indicated previously, Estes Express was involved with a spill of liquid chemicals while delivering to Cybershield of Texas. The spilled liquids and wash water were cleaned-up by Eagle Construction and Environmental Services (“Eagle”) with the wastes taken to USOR for disposal by Texas Water Management. Regrettably, the MSDS and results of the analytical sampling were not provided through Discovery. As a result, I am unable to make any

determination as to the nature of the substances released due to the spill and the hazardous nature of the materials disposed of at USOR.

360. In the TCEQ Central Registry, CITGO Petroleum Corp. is registered as a refinery and bulk terminals operator, pipeline distributor, petroleum wholesaler, and retailer of refined petroleum products. With literally hundreds of operations and locations across the state, the facility listed as “former CITGO” in the Texas Water Management discovery documents remains unknown. While I would suspect that any waste generated by such a facility would contain certain hazardous substances related to refined petroleum products, I am unable at this time to form an opinion regarding the nature of the waste attributed to the “former CITGO” facility.
361. Pick A Part Auto Wrecking, LP is registered with the TCEQ as a used motor vehicle parts merchant wholesaler (NAICS Code 423140) with a facility located at 1100 Northville Street in Houston, Harris County, Texas.
362. Waste streams generated as a part of the auto salvaging operations conducted by Pick A Part Auto Wrecking, LP would have included waste oil, transmission fluids, engine coolants, solvents, degreasers, cleaning products, sludges, and used batteries (7, 10). Based on my knowledge and experience with auto salvaging operations carried out by companies like Pick A Part during the time period in question, it is more likely than not, that the foregoing waste streams would have contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, toluene, xylene, methyl ethyl ketone, dichloroethylene, methylene chloride, perchloroethylene, trichloroethylene, trichloroethane, copper, chromium, lead, and zinc (7, 22, 30).
363. In my opinion, the waste transported from the Pick A Part facility by Texas Water Management to the USOR Site for disposal would have contained one or more of the hazardous substances above.
364. The Saw Pipes facility, located at 5200 E. McKinney Road in Baytown, Chambers County, Texas, is registered under the name of JSW Steel USA Pipe Coating Division with the TCEQ Central database (80). The facility operates as a ferroalloy manufacturing facility with available iron and steel mills (NAICS Code 331110). The facility is registered under the Industrial and Hazardous Waste, Solid Waste Program as a conditionally exempt small quantity generator.

365. As a metal fabrication facility, the processes conducted by Saw Pipes would have included metalworking, cutting, grinding, turning, degreasing, surface preparation, and coating processes, among others (3, 6). The waste streams generated at the Saw Pipes facility and listed in their Notice of Registration included spent acid pickling wastes, spent caustic, acid tank sludge, caustic sludge, caustic aqueous wash, scale, floor sweepings, empty drums and plant trash (80).
366. In my opinion, based on my knowledge and experience with metal fabrication and coating processes carried out by companies like Saw Pipes during the time period in question, and references provided by EPA and other sources, the waste streams listed above contained one or more of the following substances, all of which are hazardous substances under CERCLA: acetone, benzene, dichloroethylene, ethyl benzene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, xylenes, arsenic, barium, cadmium, chromium, copper, lead, mercury, nickel, selenium, and zinc (6, 22, 30).
367. Further, it is also my opinion that wastewater and sludges generated by the facility processes would, more likely than not, contain some, if not all, of the same hazardous substances.
368. In the TCEQ Central Registry, USAg Recycling, Inc. is registered as the regulated entity for the facility located at 18330 Penick Road in Waller, Harris County, Texas. USAg Recycling operates as a wholesale trade agent and broker (NAICS Code 425120) in the business of plastics recycling (9). Although the facility has made a request for a one-time shipment of wastes on two occasions, no other information about the wastes, is available. As a result, I am unable to form an opinion as to the nature of this waste stream at this time.
369. In summary, it is my opinion that certain waste shipments that were hauled by Texas Water Management to the USOR Site, would have contained one or more of the hazardous substances identified in the preceding paragraphs associated with the waste streams of the Saw Pipes and Pick A Part facilities. Lack of necessary information prevents me from forming an opinion for the remaining waste streams.
370. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, dichloroethylene, ethyl benzene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylenes. (85, 86)

371. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

Tideport Distributing, Inc.

372. I have reviewed the discovery records concerning the operations of Tideport Distributing, Incorporated (“Tideport Distributing”) which were provided by counsel.

373. In the Defendants’ Motion to Dismiss, Tideport Distributing stated, “Even if Tideport Distributing is found to be the successor to Tideport Petroleum or Hamner, the complaint does not contain sufficient factual matter to support the allegations that Tideport Petroleum or Hamner transported ‘hazardous waste.’ As discussed in the previous section, one element of CERCLA liability is that the defendant must be a responsible person under 42 U.S.C.A. § 9607(a). An entity may be a responsible person if it ‘accepts or accepted any hazardous substances for transport to disposal or treatment facilities, incineration vessels or sites selected by such person, from which there is a release, or a threatened release which causes the incurrence of response costs, of a hazardous substance....’”

374. In the TCEQ Central Registry, Tideport Distributing is registered as a transporter of specialized freight (NAICS 484230) with a registration under the Industrial and Hazardous Waste, Solid Waste Program (81).

375. Based on the Tideport Distributing discovery records that I reviewed, it is my understanding that Tideport Distributing transported mixtures of wastewater and hexane from the Formosa Plastics, Point Comfort Plant to the USOR site.

376. Formosa Plastics (NAICS Code 325211) is registered with the TCEQ as a large quantity generator of hazardous waste (82). In their Notice of Registration for the facility, Formosa Plastics lists an active waste stream, described as hexane and polymer mixture deactivated with water contamination (9). The presence of hexane is the mixture causes this waste to be an ignitable hazardous waste, D001.

377. It is my opinion that the wastewater generated by Formosa Plastics and transported to the USOR Site by Tideport Distributing was a characteristically hazardous waste.

United Environmental Services, LLC

378. I have reviewed the discovery records concerning the operations of United Environmental Services, LLC (“United Environmental Services”) which were provided by counsel.

379. In the Defendants' Motion to Dismiss, United Environmental Services stated "With respect to all of its allegations, Plaintiff does not identify the alleged hazardous substances transported by ProWaste or UTS with any particularity whatsoever. Plaintiff includes a laundry list of substances (and does not establish that those substances are designated as hazardous under CERCLA or the TSWDA) and states that ProWaste and UTS may have transported some or all of the substances."

380. In the TCEQ Central Registry, United Environmental Services is registered as a regulated entity that operates as transporter of general freight (NAICS 484110) and was registered as a sludge transporter until the end of August 2008 (75).

381. Based on the United Environmental Services discovery records that I reviewed, it is my understanding that United Environmental Services was affiliated with companies such as Tex-Tube, among others, and transported wastewater and sludges to the USOR site.

382. Tex-Tube is registered as a conditionally exempt small quantity generator and operates a fabricated metals and coatings facility (NAICS Code 331210) located at 1503 N. Post Oak Road in Houston, Harris County, Texas (66).

383. As discussed previously, the processes conducted by Tex-Tube would have generated waste streams containing one or more of the following hazardous substances: arsenic, barium, cadmium, chromium, lead, mercury, selenium, benzene, 1,4-dichlorobenzene, methylene chloride, methyl ethyl ketone, nitrobenzene, tetrachloroethylene, and trichloroethylene.

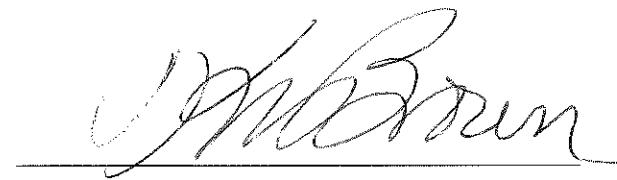
384. In my opinion, based on my knowledge and experience with metal fabrication and coating processes carried out by companies like Tex-Tube during the time period in question, and references provided by EPA and other sources, the wastewater and sludges generated by the facility processes would, more likely than not, contain some, if not all, of the same hazardous substances.

385. Further, it is also my opinion that the waste streams, transported by United Environmental Services from Tex-Tube to the USOR Site, contained some, if not all, of the same hazardous substances that were later identified as contaminants of concern at the USOR Site.

386. Emergency response actions by USEPA and the TCEQ in July, 2010, November 2010, and January 2011, identified the following substances, among others, as contaminants of concern for the site: acetone, benzene, dichloroethylene, methyl ethyl ketone, methylene chloride, perchloroethylene, toluene, trichloroethane, trichloroethylene, and xylenes. (85, 86)

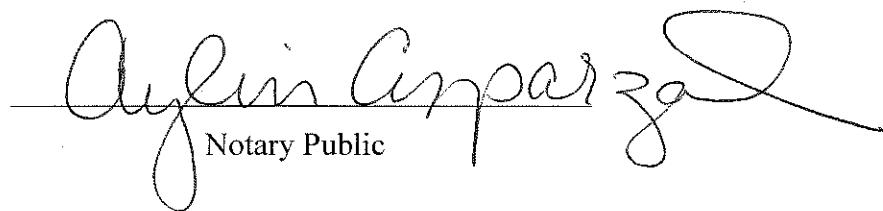
387. A health consultation by the ATSDR of the neighboring Vince Bayou in August 2009, identified chromium, copper, lead, nickel, and zinc, among other metals as contaminants of concern (83).

FUTHER AFFIANT SAYETH NAUGHT

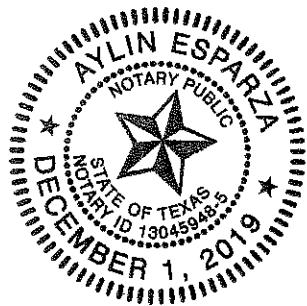


Dr. Kirk Wye Brown

SUBSCRIBED AND SWORN to
before me this 28th day of October, 2016.



Aylin Esparza
Notary Public



APPENDIX 1

Kirk W. Brown, Ph.D.

Biographical Data

Principal Consultant; KW Brown, Environmental Consultant

Born: July 3, 1940; Bethlehem, PA

Citizenship: U.S.A.

Marital Status: Married

No. of Children: 3

Education

Ph.D., Agronomy, University of Nebraska, 1969

M.S., Agronomy/Plant Physiology, Cornell University, 1964

B.S., Agronomy, Delaware Valley College, 1962

Areas of Expertise

Fate and Movement of Salt, Oil, Metals, Organic Chemicals, Gases, Nutrients, Pesticides and Pathogens in Soil, Air and Groundwater Environments; Remediation of Metal and Organic Chemical Contaminated Soils and Groundwater; Leachability and Translocation of Metals and Organic Chemicals in the Soil Profile; Fixation and Stabilization of Metals in the Environment; Characteristics of Hazardous and Municipal Wastes; Industrial Waste Stream Identification; Classification and Fingerprinting of Waste Materials; Disposal of Municipal, Industrial, and Hazardous Waste by Land Treatment and Landfilling; Land Treatment of Sewage Sludge, Industrial Wastewater and Sludge; Bioremediation of Polluted Soils; Vapor Extraction of Soils; Toxicity and Risk-based Assessment of Soil Contaminants to Plants and Animals; Flux of Volatile Chemicals in Air; Air Dispersion Modeling; Influence of Chemicals on the Permeability of Landfill Liners; Sources and Transport of Methane; Composting of Municipal and Hazardous Waste; Design and Operation of Septic Systems; Nonpoint Source Pollution; Expansive Properties of Clay Soils; Soil Solution Sampling; Fate of Mutagenic Compounds in Soil; Mold and Fungal Growth; Reclamation of Drastically Disturbed Lands; Aerial Photo Interpretation; Soil Use and Suitability Classification; Agricultural Water Use Efficiency; Crop Water Stress; Golf Green and Athletic Field Construction; Use of Windbreaks; Soil Crusting; Gas Movement in Soil.

Academic

Professor Emeritus, Soil and Crop Sciences, Texas A&M University, 2001-Present.

Professor, Soil and Crop Sciences, Texas A&M University, 1981-2001.

Associate Professor, Soil and Crop Sciences, Texas A&M University, 1973-1981.

Assistant Professor, Soil and Crop Sciences, Texas A&M University, 1970-1973.

Visiting Scientist, Center of Plant Physiological Research, Wageningen, Netherlands, August, 1969-July, 1970.

Research Assistant, University of Nebraska, June, 1965-December, 1969.

Teaching Assistant, Cornell University, September, 1964-June, 1965.

COURSES TAUGHT

Soil Physics (Undergraduate Course No. 445) 1970-2001.

The practical aspects of soil texture, structure, water management, as well as the theoretical aspects of soil water potentials, and the movement of water, ions, gas, and heat in the soil.

Advanced Soil Physics (Graduate Course No. 617) 1970-1988.

An in-depth study of the physical properties of soil including basic principles which regulate the dynamics of soil, water and ion movement, soil aeration, and soil thermal relationships. Equations describing these processes are presented and references to current literature are provided for outside reading.

Kirk W. Brown

Reclamation of Drastically Disturbed Lands (Graduate Course No. 615) 1979-1986.

Concepts influencing the reclamation, revegetation, and establishment of a stable ecological system on lands that have been drastically disturbed by strip mining, severe erosion, or toxic waste contamination.

Land Disposal of Wastes (Graduate Course No. 616) 1987-2001.

The theoretical and practical aspects of the land treatment and landfilling of a wide range of municipal, industrial, and hazardous wastes. Emphasis has been placed on the fate and mobility of various waste constituents in the soil and the influence of soil physical and chemical properties on constituent fate.

Short Courses Taught

Soil Science Institute (One month course) 1984, 1986, 1992, 1993

Land Treatment of Industrial Waste - Chemical Engineering Society, 1982, 1983.

Landfill Liner Design, University of Texas - 1986, 1987.

Society Memberships

American Society of Agronomy, 1970-2001

Soil Science Society of America, 1970-2001

American Chemical Society, 1970-2001

International Society of Soil Science, 1970-2001

Editorial Board

Environmental Engineering Science, formerly Hazardous Waste and Hazardous Materials. 1989-2001.

Reviewed Papers For

Soil Science Society of America Proceeding; Soil Science, Journal of Environmental Quality; Environmental Engineering Science, formerly Hazardous Waste and Hazardous Materials; ATSDR; American Petroleum Institute; Water, Air & Soil Pollution; Waste Management & Research, Water Pollution Control Federation; Water Research; Waste Management; Journal of Hazardous Materials; Archives of Environmental Contamination and Toxicology.

Elected Positions

Chairman, ASA Section A5, 1989-90

General program chairman for ASA meetings, 1973

Chairman, ASA Section A3, 1972

Committee Appointments

National Academy of Sciences, National Research Council Committee on Environmental Technologies Subcommittee on Landfills (1995-1998).

EPA Review for Risk Assessment for Petroleum Industry Hazardous Waste Listing Determination (Sept 1995).

Environmental Geosciences Advisory Committee of the American Geological Institute representing the Soil Science Society of America (1993-2000).

National Academy of Sciences (NRC) Committee on Remedial Action Priorities for Hazardous Waste Sites (1991-1994).

Texas Natural Resource Conservation Commission Committee on rules on Wastewater Treatment Plant Sludge, Water Treatment Plant Sludge and Septic Tank Sludge Disposal (1992-1993).

Texas Water Commission Committee to Develop Regulations on the Land Application of Sewage Sludge (1992-93).

Faculty of Toxicology Executive Committee, Texas A&M University (1990-93).

Texas Governor's Infrastructure Committee on Free Trade (1991).

Oklahoma Corporation Commission on Land Application of Oil Field Drilling Waste (1990-1991).

Texas Department of Health Ad Hoc Committee for Revising the Construction Standards for On-Site Sewage Facilities (1989-90).

EPA Hazardous Waste Center Review Panel (1988).

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National Science Foundation, Environmental Engineering Div., Review Panel (1987-1995).
Texas Dept. of Health Septic Disposal Regulations Revision Panel (1987).
Advisory Panel to Chicot Aquifer Management Project (Louisiana). McNeese State University, LA (1987-1990).
ASA Editorial Committee "Reaction and Movement of Organic Chemicals in Soils" 1987.
Advisory Panel to U.S. Congressional Office of Technology Assessment (OTA) on An Assessment of the Effectiveness of the EPA in Identifying, Prioritizing and Cleaning Up Hazardous Waste Sites (1987-1995).
Organizing Committee for SSSA Workshop on Utilization, Treatment and Disposal of Waste on Land (1985).
Panel to Write Research Needs for Hazardous Wastes Treatment and Disposal for National Science Foundation. Drexel University, PA (1986).
EPA Technical Advisory Panel on the Adequacy of Ground Water Monitoring at Hazardous Waste Landfills (1985).
Panel to Write the Mutagenicity Sample Preparation Protocol for EPA (1984).
EPA Panel to Review the Acceptability of Landfill Disposal of Sewage Sludge (1984).
Office of Water Regulations and Standards Committee on Municipal Sludge Landfilling to Advise EPA on the Pollutants which should be Regulated for Various Disposal Options and the Methods or Procedures to be Used for Regulating such Pollutants (1984).
Advisory Panel to U.S. Congressional Office of Technology Assessment (OTA) to Determine the Effectiveness of Current Programs to Clean Up Uncontrolled Hazardous Waste Sites (1983-84).
EPA Science Review Panel for Environmental Engineering Research Grants (1982-1998).
United States Environmental Protection Agency Land Treatment Task Force (1981-1985).

Significant Reports Resulting from Committee Assignments

National Research Council. 1999. "Groundwater & Soil Cleanup, Improving Management of Persistent Contaminants".
National Research Council. 1994. "Ranking Hazardous Waste Sites".
Office of Technology Assessment, Congress of the United States of America. 1989. "Coming Clean, Superfund Problems Can be Solved".
Office of Technology Assessment, Congress of the United States of America. 1985. "Superfund Strategy".

University Committees

Texas A&M University Environmental Safety and Health Committee (1987-90).
Council of Principal Investigators, Texas A&M University (1986-1990).
Texas Agricultural Experiment Station 5-Year Planning Board.
Texas A&M University Faculty Forum (1979-82).
Texas Agricultural Experiment Station Grant Support Committee (1976-77).

Awards

Texas A&M University College of Agriculture Award for Excellence in Teaching (1995)
Texas A&M University System Award for Excellence in Graduate Teaching (1988)
ASA Environmental Quality Research Award (1988)
Fellow - Soil Science Society of America (1987)
Fellow - American Society of Agronomy (1986)
Distinguished Alumni Award, Delaware Valley College (1986)
Superior Achievement Award for Research, Soil and Crop Sciences Department, Texas A&M University (1986)
Pollution Engineering Magazine Award of Merit for Outstanding Editorial Contribution "The Case for Aboveground Landfills" (1984)

Books Authored

Hazardous Waste Land Treatment. 1983. Butterworth Publishers, 10 Tower Office Park, Woburn, MA 01801.
Reactions and Movement of Organic Chemicals in Soils. 1989. Sawhney, B. L. and K. W. Brown. SSSA/ASA Publishers, SSSA Special Publication No. 22, 494 pgs.

Professional Experience Outside the United States

Visiting Scientist at Center of Plant Physiological Research, Wageningen (1969-70).

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Testimony Before Legislative Bodies

Texas House of Representatives - Environmental Affairs Committee, April 1987. Testified on the need for legislation to set up a waste management plan for the state.

Texas Governor's Taskforce on Oil Spills, February 1985. Testified on the fate of oil spill debris and disposal technology options.

Texas Governor's Taskforce on Hazardous Waste, November 1984. Testified on the effectiveness of landfills for disposal technology.

Texas Governor's Taskforce on Hazardous Waste, June 1984. Testified on the impact of organic chemicals on the permeability of soils.

U.S. House of Representatives - Science and Technology Committee, November 1982. Testified on the adequacy of EPA's liquid management system to protect groundwater at hazardous waste landfills.

Texas House of Representatives - Environmental Affairs Committee, April, 1982. Testified on the impact of organic chemicals on the permeability of clay liners.

Consulting

Founder and President of K. W. Brown and Assoc., Inc., (1980- 1991). Chief technical consultant to K. W. Brown Environmental Services (1991-1999), SI Group, LP (2000-2009), TTI Environmental Consultants (2009-2011), and as an independent consultant (2011-Present). Past consulting activities have included assignments with Dupont, Alcoa, General Motors Corporation, Minnesota Mining & Manufacturing, WR Grace, Owens Corning, Union Pacific Railroad, Chevron, Shell, Exxon, Texaco, Arco, Sunoco, El Paso Products, New York Attorney General's Office, Illinois Attorney General's Office, Minnesota Attorney General's Office, Minnesota Pollution Control Administration, U.S. EPA, U.S. Army Corps of Engineers, and U.S. Dept. of Justice.

Consulting activities have included consultations on the cleanup and disposal of wastes, the impacts of hazardous waste on the environment, assessment and remediation of exploration and production releases, the design of hazardous waste landfills and solid waste management units, and the fate and mobility of chemicals in the soil, groundwater, and air, as well as, providing expert testimony at permit hearings, mediation hearings, civil suits, and before legislative bodies on these topics. My expertise has been utilized for site assessments, data review and interpretation, the study of fate and transport of contaminants in the environment, waste management activities, historical oilfield and landfill operations, and other related environmental matters. I have reviewed and interpreted a large quantity of analytical data for air, soils and groundwater, as well as boring logs, field logs, technical reports, and other information related to the environmental conditions of a site. I have prepared and reviewed remedial action plans for hundreds of sites including sites contaminated with metals, organic chemicals, pesticides, biological pathogens and petroleum production wastes. I have designed and implemented remedial actions at numerous hazardous waste sites under the auspices of both state and federal regulatory authorities.

As a consultant, I have evaluated or analyzed hazardous substances in industrial waste streams from numerous industries including the lumber and paper industries, the printing industry, chemical manufacturing industry, petroleum exploration, production, processing and refining industries, plastics and rubber products industry, leather tanning and finishing, metal smelting and finishing, electric utilities, and the electronic components manufacturing industry, among others. I have conducted extensive research on the hazardous substances contained in municipal and household waste with a special emphasis on the fate and mobility of these constituents in the environment after disposal in municipal solid waste landfills. I have provided evaluations and assessments for numerous waste disposal and landfill sites including the following: Love Canal Landfill, Lowrey Landfill, Helen Kramer Landfill, Junker Landfill, Lemberger Landfill, Laurel Park Landfill, Beacon Heights Landfill, RCA-Buzby Landfill, Valleycrest Landfill, Boarhead Farms, Pennsauken Landfill, Lone Pine Landfill, Ft. Bend County Landfill, and Sinton Landfill, among others. In addition, I have also provided expert testimony for civil actions involving the following Superfund sites: Hardage Criner, Montana Pole, National Gypsum, Brio/Dixie Oil Processors, Sikes' Pits, Turtle Bayou, Metal Bank of America, Tar Creek, and the West Dallas Lead Site.

Guest Lectures

Dewatering of confined dredge spoil areas. In: *Second International Symposium on Dredging Technology*. BHRA Fluid Engineering, Cranfield, Bedford, England. Paper G1:1-24. (1977).

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Revegetation of drastically disturbed lands. Texas A&M Lignite Symposium. April 17-18. (1980).
Impact of surface mining on water quality. Texas A&M Lignite Symposium, April 17-18, 1980.
Factors influencing the biodegradation of API separator sludges applied to soils. Presented at the Seventh Annual Research Symposium at Philadelphia, PA. March 16-18, 1981.
Land treatment of industrial hazardous wastes. Presented at a Symposium and Workshop on Hazardous Waste Management. Louisiana State University, November 16-20, 1981.
Effect of organic chemicals on clay liner permeability. A review of the literature. Presented at the Sixth Annual Research Symposium at Philadelphia, PA. 1981.
Land disposal of oily wastes. Brest, France. August, 1982.
Influence of organic liquids on the permeability of clay soils. Harwell, Great Britain. July, 1982.
Use of sewage effluent for irrigation. Adelaide, Australia. June, 1982.
Influence of organic liquids on the integrity of liners to pits, ponds, lagoons and landfills. Waste Water Analysts Assoc., Houston, TX. November, 1982
Reclamation of strip mined lands. Sierra Club, Austin, TX. November, 1982.
Waste disposal on range land. Range Science Department, Texas A&M University. College Station, TX. November, 1982.
The politics of hazardous waste disposal. Political Science Department, Texas A&M University. College Station, TX. October, 1982.
The treatment and disposal of hazardous, industrial and toxic waste. American Society of Civil Engineers, Austin, TX. September, 1982.
Effect of organic fluids on the permeability of clay soil liners. Presented at the Eighth Annual Research Symposium at Ft. Mitchell, Ky. March 8-10, 1982.
The fate of mutagenic compounds when hazardous wastes are land treated. Presented at the Eighth Annual Research Symposium at Ft. Mitchell, Ky. March 8-10, 1982.
The influence of chemicals on the permeability of clay liners. Presented at Hazardous Waste Conference, Chicago, Ill. June 28-29, 1983.
Cleanup of chemicals spilled on soils. Presented at the Texas Agricultural Extension Service Conference, Houston, Texas. June 23, 1983.
The reclamation of strip mined land. Presented at Texas Environmental Coalition in Austin, Texas Jan. 22, 1983.
The influence of selected organic liquids on the permeability of clay liners. In: D. W. Shultz (ed). Land Disposal, Incineration, and Treatment of Hazardous Waste. Proceedings of the 9th Annual Research Symposium at Ft. Mitchell, Ky. May 2-4, 1983.
Panel on land treatment of sewage sludge. EPA Workshop on Sewage Disposal, Denver, CO. March 1983.
Land disposal of hazardous liquids. Waste Management Conference, Houston, TX. February 1983.
Alternatives to land disposal of waste. Dept. of Agriculture Seminar, University of Houston. Sept. 10, 1984.
How to write a successful research proposal. Soil Science Graduate Seminar, Soil & Crop Sciences Dept, Texas A&M University, Sept. 19, 1984.
The advantages of above ground disposal. Waste Tech Conference, Houston, October 30, 1984.
Potential groundwater implications of surface storage of toxic substances. Groundwater Symposium, Gunter Hotel, San Antonio, Texas. October 30, 1984.
Clean up of spills; Alternative disposal methods. Geotechnical Engineering for Waste Disposal Symposium, University of Texas, Austin. November 2, 1984.
The properties of soils and containment of waste. Environmental Engineering Seminar, Civil Engineering Dept., Texas A&M University, College Station, 1984.
Carbon dioxide flux at the earth's surface. Texas A&M University, College Station, February 1984.
Above ground landfills in hazardous waste management schemes. National Conference and Exhibition on Hazardous Waste and Environmental Emergencies. Houston, Texas, March 1984.
Fate of mutagens applied to soil. Environmental Toxicology and Pharmacology Seminar. Texas A&M University, College Station, March, 1984.
Permeability of compacted soils to solvents mixtures and petroleum products. Presented at the Tenth Annual Research Symposium at Cincinnati, Ohio, April 1984.
Simulation of Potential Rainfall Conservation from Two Cross-Diked Furrow Bed Designs. Texas A&M University, College Station. February 1984.

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The soil scientist as a consultant. Soil Science Graduate Seminar, Panel Discussion. Soil & Crop Sciences Dept, Texas A&M University, Sept. 12, 1984.

Land disposal of hazardous waste. Agricultural Engineering Dept. Graduate Seminar, Agricultural Engineering Dept., Texas A&M University. Sept. 13, 1984.

Geotechnical engineering for waste disposal projects. University of Austin, Texas, October 1985.

Monitoring the unsaturated zone. Presented at the National Specialty Conference. Land Treatment: A Hazardous Waste Management Alternative, April 16-18, 1985, Austin, Texas.

Ability of sorbents to retain liquids in landfills, 10th Annual American Organization of Analytical Chemists' Spring Workshop, Dallas, Texas April, 9-11, 1985.

Geotechnical engineering for waste disposal projects. University of Austin, Texas, October 1986.

Potential health effects of hazardous waste contaminants in groundwater. Public Health Grand Rounds, University of Pittsburgh Graduate School of Public Health. January 23, 1986.

Geotechnical engineering for waste disposal projects. University of Texas, Austin, October 1986.

Influence of organic liquids on the hydraulic conductivity of soils. University of Cambridge, United Kingdom. September 9-11, 1987.

Design and construction of the growth media in golf greens, Montreal, Canada, 1987.

Groundwater pollution problems associated with fertilizers, pesticides, and leaking storage tanks. Pro Show, Dallas, November 1987.

Mutagenic testing of hazardous waste sites. Southwest Environmental Mutagenic Society, Houston, November 1987.

The use of lime for waste disposal and treatment of hazardous waste contaminated sites. National Lime Association, Phoenix, AZ, April 1987.

A soil scientist as an expert witness - Presented to the Soil Survey and Land Resource Workshop. February 19, 1988.

Guest lecture to Rio Brazos Audubon Society - May 2, 1988.

Presentation to the Texas Association of Milk, Food and Environmental Sanitarians, June, 1988.

Guest lecture to Range Science Ecology and Land Use class. Dept. of Range Science, Texas A&M University, Nov. 18, 1988.

Hazardous Waste: A general overview. Agricultural Engineering, Environmental and Water Resources Engineering and Texas Water Resources Institute Seminar, Texas A&M University, College Station, TX. January 1989.

The need for community recycling. Environmental Organization, Civil Engineering Dept., Texas A&M University, College Station, TX. February 1989.

Superfund sites: The problems and the solutions. Industrial Hygiene Seminar, Texas A&M University, College Station, TX. February 1989.

Hazardous waste disposal on the Gulf Coast Texas. Texas ASA Annual Meeting. Galveston, Galveston County, Texas, February 1989.

New technologies for liners - Presented at the Conference on Prevention and Treatment of Groundwater and Soil Contamination in Petroleum Exploration and Production. Calgary, Alberta, Canada, May 9-12, 1989.

Guest Lecture to Range Science Ecology and Land Use Class: Dept. of Range Science, Texas A&M University, College Station, TX. Oct. 4, 1989.

Ongoing and future research in the geowaste area. Presented to the Geo Waste Group Meeting, Civil Engineering Dept. Texas A&M University, Nov. 1, 1989.

Waste disposal: where do we go from here? Presented to the MSC Great Issues: Environmental Symposia. Texas A&M University, College Station. Nov. 7, 1989.

Innovative technologies from the 1990s in environmental matters. Presentation to South Texas College of Law Environmental Law Symposium, January 17, 1990.

Waste disposal, past, present, and future. Presented at the seminar entitled "Disposing of Hazardous Materials". MSC, Texas A&M University, College Station, TX January 1990.

Panel discussion session at Vertisol Management Workshop: International Collaboration in Research, Training and Extension. Texas A&M University, College Station, June 25-29, 1990.

Municipal waste disposal - where do we go from here. Presentation to Texas Environmental Action Coalition, Texas A&M University, College Station, TX. Sept. 5, 1990.

Presentation to the Texas Section of American Society of Agricultural Engineers, College Station, TX. October 11, 1990.

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Presentation on golf green construction at Canadian Golf Superintendents Association Conference, Montreal, Canada. Dec. 11, 1990.

Environmental Soil Science and Technology. Presentation to the 1991 Texas Agric. Experiment Station Conference - Environmental Soil Science Session, College Station, TX. January 1991.

Movement of pesticides to groundwater. Presentation to the Texas Association of Agricultural Consultants. Austin, Texas, January 21, 1991.

Movement of pesticides to groundwater. Presentation to the Texas Agricultural Extension Service Conference for Producers, Austin, TX, January 25, 1991.

Pesticide rinsate disposal options. Presentation to the Research Center Administrators Society meeting, Dallas, Texas February 3-5, 1991.

Movement of pesticides to groundwater. Presentation to the Texas Agricultural Extension Service Conference for Grounds Keepers. Round Rock, Texas, February 21, 1991.

Liners for Hazardous Waste Sites. Presented at the Hazardous Waste Management Division's Lecture Series. U.S. Environmental Protection Agency, Region 6, 1445 Ross Ave., Suite 1200, Dallas, TX. 1991.

Decontamination of polluted soils. Presented at the Second International Conference on the Biogeochemistry of Trace Elements, Taipei, Taiwan, Republic of China. Sept. 5-10, 1993.

Using plants to reclaim contaminated sites. Crop Science Seminar. Soil & Crop Sciences Dept., Texas A&M University, College Station, TX, October 24, 1994.

Vadose zone modeling of the fate and movement of volatile contaminants, Geological Society of America, South-central Section Conference, Austin, TX, March 12, 1996.

Banning of liquid wastes from landfills - development of the technical data and the regulations, South Texas Environmental Conference, Corpus Christi, TX, March 29, 1996.

The science behind RCRA/CERCLA enforcement (Part II), Science For Environmental Attorneys, Denver CO, November 6, 1997.

Scientific Publications

1. Allen, L. H. and K. W. Brown. 1965. Shortwave radiation in a corn crop. *Agron. J.* 57:575-580.
2. Brown, K. W. and W. Covey. 1966. The energy budget evaluation of the micrometeorological transfer processes within a corn field. *Agri. Meteorol.* 3:73-96.
3. Brown, K. W. and L. J. Wright. 1967. Comparison of momentum and energy balance method of computing vertical transfer within a crop. *Agron. J.* 59:427-432. C701.
4. Brown, K. W. and N. J. Rosenberg. 1968. Errors in sampling and infrared analysis of CO₂ in air and their influence in determination of net photosynthetic rate. *Agron. J.* 60:309-311.
5. Brown, K. W. 1969. A model of the photosynthesizing leaf. *Phys. Plant* 22:620-637.
6. Brown, K. W. and N. J. Rosenberg. 1969. Computer program for plotting time dependent meteorological data. *Agric. Meteorol.* 6:463-464.
7. Brown, K. W. and N. J. Rosenberg. 1970. Concentration of CO₂ in the air above a sugar beet field. *Mo. Weather Rev.* 98:75- 82.
8. Brown, K. W. and N. J. Rosenberg. 1970. The influence of leaf age, illumination and upper and lower surface differences on stomatal resistance of sugar beet (*Beta vulgaris*) leaves. *Agron. J.* 62:20-24.
9. Brown, K. W. and N. J. Rosenberg. 1970. The effect of windbreaks and soil water potential on stomatal diffusion resistance and photosynthetic rate of sugar beets (*Beta vulgaris*). *Agron. J.* 62: 4-8.
10. Brown, K. W. and N. J. Rosenberg. 1970. Energy and CO₂ balance of an irrigated sugar beet (*Beta vulgaris*) field in the Great Plains. *Agron. J.* 63:207-213.
11. Brown, K. W. and N. J. Rosenberg. 1970. Shading inverted pyranometers and measurements of radiation reflected from an alfalfa crop. *Water Res. Res.* 6:1782-1786.
12. Rosenberg, N. J. and K. W. Brown. 1970. Improvements in the van Bavel-Myer automatic weighing lysimeter. *Water Res. Res.* 6:1227-1229.
13. Briggs, W. W., A. R. Edison, J. D. Eastin, K. W. Brown, J. W. Marenville, and M. D. Clegg. 1971. Photosynthesis light sensor and meter. *Ecology* 52:125-131.
14. Brown, K. W. and N. J. Rosenberg. 1971. Turbulent transport and energy balance as affected by a windbreak in an irrigated sugar beet (*Beta vulgaris*) field. *Agron. J.* 53:351-355.
15. Brown, K. W. and N. J. Rosenberg. 1971-2. Shelter-effects on micro-climate, growth and water use by irrigated sugar beets in the Great Plains. *Agric. Meteorol.* 9:241-263.

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16. Brown, K. W. and N. J. Rosenberg. 1973. A resistance model to predict evapotranspiration and its application to a sugar beet field. *Agron. J.* 65:341-347.
17. Duble, R. L. and K. W. Brown. 1973. Environmental concerns for the golf superintendent. *USGA Green Section Record.* 11:10-13.
18. Brown, K. W. 1974. Calculations of evapotranspiration from crop surface temperature. *Agric. Meteorol.* 14:199-209.
19. Holder, C. B. and K. W. Brown. 1974. Evaluation of simulated seedling emergence through rainfall induced soil crusts. *Soil Sci. Soc. Amer. Proc.* 38:705-710.
20. Brown, K. W., C. J. Gerard, B. W. Hipp and J. T. Ritchie. 1974. A procedure for placing large undisturbed monoliths in lysimeters. *Soil Sci. Soc. Amer. Proc.* 38:981-983.
21. Rosenberg, N.J. and K. W. Brown. 1974. "Self-checking" psychrometer system for gradient and profile determinations near the ground. *Agric. Meteorol.* 13: 215-226.
22. Spotts, J. W. and K. W. Brown. 1975. A technique for installing induction coils in a profile with minimum soil disturbance. *Soil Sci. Soc. Amer. Proc.* 39: 1006-1007.
23. Jordan, W. R., K. W. Brown and J. C. Thomas. 1975. Leaf age as a determinant in stomatal control of water loss from cotton during water stress. *Plant Physiol.* 56:595-599.
24. Brown, K. W. and R. L. Duble. 1975. Physical characteristics of soil mixtures used for golf green construction. *Agron. J.* 67:647-652.
25. Brown, K. W. 1975. A device for isolating soil columns with minimum disturbance. *Soil Sci. Soc. Amer. Proc.* 39:1008-1009.
26. Brown, K. W. and N. J. Rosenberg. 1975. Annual windbreaks boosts yields. *Crop and Soils Magazine.* p. 8-11. Apr-May, 1975.
27. Brown, K. W. 1976. Chapter II. 3. Sugar beet and potatoes. In: Vegetation and the Atmosphere. (J. L. Monteith, ed.). Academic Press, NY. p. 65-86.
28. Thomas, J. C., K. W. Brown and W. R. Jordan. 1976. Stomatal response to leaf water potential as affected by preconditioning water stress in the field. *Agron. J.* 68:706-708.
29. Deuel, L. E., Jr., K. W. Brown, F. C. Turner, D. G. Westfall and J. D. Price. 1976. Persistence of Propanil, DCA, and TCAB in soil and water under flooded rice culture. *JEQ* 6:127.
30. Brown, K. W., W. R. Jordan and J. C. Thomas. 1976. Water stress induced alteration in the stomatal response to leaf water potential. *Phys. Plant.* 37:1-5.
31. Chaudhari, K. G., K. W. Brown, and C. B. Holder. 1976. Reduction of crust impedance to emergence by the addition of manure. *Soil Sci.* 122:216-222.
32. Deuel, L. E., Jr., F. C. Turner, K. W. Brown and J. D. Price. 1977. Persistence and factors affecting dissipation of molinate under flooded rice culture. *JEQ* 7:373-377.
33. Brown, K. W. 1977. Chapter 19. Shrinking and swelling of clay, clay strength and other bulk properties of clay soils and clays. In Minerals in Soil Environments. (J. B. Dixon and S. B. Weed eds.). *Soil Sci. Soc. of Amer.*, pp. 680-707, Madison, WI.
34. Brown, K. W., R. L. Duble and J. C. Thomas. 1977. Nitrogen losses from golf green, *USGA Green Section Record.* 15:5-7.
35. Brown, K. W., F. C. Turner, J. C. Thomas and M. E. Keener. 1977. Water balance of flooded rice paddies. *J. of Agr. Water Use* 1:277-291.
36. Deuel, L. E. Jr., K. W. Brown, J. D. Price and F. C. Turner. 1977. Persistence of carbofuran and its metabolites, 3-keto and 3-hydroxy carbofuran, under flooded rice culture, *JEQ* 8:23-26.
37. Brown, K. W., R. L. Duble and J. C. Thomas. 1977. Influence of management and season on fate of N applied to golf greens. *Agron. J.* 69:667-671.
38. Brown, K. W. and L. J. Thompson. 1977. Dewatering of Confined Dredge Spoil Areas. Second International Symposium on Dredging Technology. 2-4, November, 1977, Texas A&M University pp. G1-1-G1-24.
39. Shive, J. B. and K. W. Brown. 1978. Quaking and gas exchange in cottonwood (Populus deltoides, Marsh) leaves. *Plant Physiol.* 61: 331-333.
40. Duble, R. L., J. C. Thomas and K. W. Brown. 1978. Arsenic pollution from underdrainage and runoff from golf greens. *Agron. J.* 70:71-74.
41. Duble, R. L., K. W. Brown and J. C. Thomas. 1978. Increase fertilizer efficiency and reduce nutrient loss. *Golf Superintendent* 46:28-31.

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42. Jones, S. G., K. W. Brown, L. E. Deuel and K. C. Donnelly. 1978. Influence of rainfall on the retention of sludge heavy metals by the leaves of forage crops. *JEQ* 8:69-72.
43. Brown, K. W. and J. C. Thomas. 1978. Uptake of nitrogen by grass from septic fields in three soils. *Agron. J.* 70:1037-1040.
44. Brown, K. W., D. C. Anderson, S. G. Jones, L. E. Deuel, Jr., and J. D. Price. 1979. The relative toxicity of four pesticides in tap water and water from flooded rice paddies. *Int. J. Env. Studies.* 141:49-54.
45. Brown, K. W., H. W. Wolf, K. C. Donnelly and J. F. Slowey. 1979. The movement of fecal coliform and coliphage below septic lines. *JEQ* 8:121-125.
46. Wagner, T. L., J. A. Gagne, P. C. Doraiswamy, R. N. Coulson and K. W. Brown. 1979. Development time and mortality of *Dendroctonus frontalis* in relation to changes in tree moisture and xylem water potential. *Environ. Entomol.* 8: 1129-1138.
47. Brown, K. W. and D. C. Anderson. 1980. Effect of organic chemicals on clay liner permeability: A Review of the Literature. In: D.W. Shultz (ed.). *Disposal of Hazardous Waste. Proceedings of the 6th Annual Research Symposium at Chicago, Illinois.* EPA-600/9-80-010. pp. 123-134.
48. Brown, K. W. and L. E. Deuel. 1980. Revegetation of Drastically Disturbed Lands. *Texas A&M Lignite Symposium*, April 17-18, 1980. pp. 19.0-19.8
49. Brown, K. W., L. E. Deuel, Jr. and J. C. Thomas. 1980. Optimization of land cultivation parameters. In: D.W. Shultz (ed). *Disposal of Hazardous Waste. Proceedings of the 6th Annual Research Symposium at Chicago, Illinois.* EPA- 600/9-80-010. pp. 254-259.
50. Brown, K. W. and C. B. Holder. 1980. The relationship between oxygen and water uptake by roots of intact bean plants. *Soil Sci. Soc. Amer. J.* 44:21-25.
51. Brown, K. W., S. G. Jones, and K. C. Donnelly. 1980. The influence of simulated rainfall on residual bacteria and virus on grass treated with sewage sludge. *JEQ* 9(2):261-265.
52. Brown, K. W. and J. C. Thomas. 1980. The influence of the sand layer on available water retention in a golf green. *USGA Green Section Record* 18(6):5-7.
53. Brown, K. W. and J. C. Thomas. 1980. The influence of water stress preconditioning on dark respiration. *Physiologia Plantarum.* 49:205-209.
54. Brown, K. W., J. C. Thomas and A. Almodares. 1980. The necessity of the two-inch sand layer in greens construction. *USGA Green Section Record* 18(6):1-4.
55. Brown, K. W., L. J. Thompson, K. W. Launius and L. E. Deuel, Jr. 1980. Physical properties of dredged materials. *Soil Sci.* 129(2):95-106.
56. Turner, F. T., K. W. Brown, and L. E. Deuel. 1980. Nutrients and associated ion concentrations in Irrigation Return Flow from Flooded Rice Fields. *JEQ* 9(2):256-260.
57. Deuel, L. E. and K. W. Brown. 1980. Impact of surface mining on water quality. *Texas A&M Lignite Symposium*, April 17-18, 1980. pp. 16.1-16.5.
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"To develop a plan to minimize the volume of runoff water which must be treated and disposed of and to assess the feasibility of land disposal of the runoff water and sludge." 1979-1980. Funded by Texas Engineering Extension Service for \$11,058.40. Final Report submitted April, 1980.

"Investigate the concentration of heavy metals and certain other physical and chemical properties - Gibbons Creek Lignite Mine." 1980. Funded by Texas Municipal Power Agency for \$12,500. Final Report submitted April, 1980.

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"Root distribution of bermudagrass grown on reclaimed lignite spoil." 1980-1981. Funded by the Center for Energy and Mineral Research for \$12,590. Final Report submitted August, 1981.

"A residual evaluation of the influence of chemicals on the permeability of soil clays." 1979-1980. Funded by the Environmental Protection Agency for \$91,783. Report submitted December, 1981.

"Investigate the influence of organic matter quality and placement on the establishment of grass and the physical properties of golf green mixes." 1979-1981. Funded by the U. S. Golf Association, Green Section for \$10,177. Final Report submitted February, 1982.

"Metal uptake by grasses grown on reclaimed lignite spoils." 1979-1980. Funded by the Center for Energy and Mineral Research for \$13,100.

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"Quantify leak rates through holes in landfill liners" 1983-1985. Funded by Environmental Protection Agency for \$232,769. Final report submitted in 1986.

"Efficiency of soil core and soil-pore liquid sampling systems". 1983-1985. Funded by Environmental Protection Agency for \$101,766. Final report submitted in 1986.

"Completion of Field Investigation and an Evaluation of Mechanisms by which Organic Liquids Alter the Permeability of Clay Soils". 1984-1985. Funded by EPA for \$59,000. Final report submitted in 1986.

"Mobility and Stability of Mutagenic Compounds in Municipal Sewage Sludge Amended Soil." 1984-1986. Funded by Environmental Protection Agency. for \$281,800.

"Development of a Capillary Wick Unsaturated Zone Pore Water Sampler." 1985-1986. Funded by Environmental Protection Agency for \$236,353.

"Evaluation of the Thickness of Clay Liners Required to Meet RCRA Requirements". Funded by Environmental Protection Agency. 1987-1989. First year funding \$122,184.

"Development of a Pesticide Rinse Water Digester". 1986-88. Funded by Texas Water Resource Institute for \$58,000.

"Determination of the optimum furrow dike size to minimize rainfall runoff". 1985. Funded by Texas Water Resource Institute for \$17,500.

"In situ vapor extraction of volatile contaminants at Superfund sites" 1987-88. Funded by Texas Water Resource Institute for \$40,000.

"Development of a comprehensive testing protocol to assess the hazard of an uncontrolled hazardous waste site". 1987-89. Funded by Environmental Protection Agency for \$315,897.

"Evaluation of the Bacterial Mutagenicity and Chemical Characteristics of Municipal Landfill Leachate". 1988-1990. Sponsored by Texas Water Resource Institute, \$47,500.

"Bioassay Directed Chemical Characterization of Hazardous Organic Chemicals in Waste Contaminated Environments". Funded by National Institute of Health, 1989-1992, \$422,000.

"The Use of Short-Term Bioassays to Assess the Human Health Hazard of Uncontrolled Hazardous Waste Sites". Funded by National Institute of Health, 1989-1992, \$607,000.

"In Situ Bioremediation of Hazardous Substances in the Vadose Zone". Funded by USEPA, 1988-1991, \$341,164.

"Effectiveness of Multiple Liner Systems for Hazardous Waste Containment Facilities". Funded by USEPA, 1988-1991, \$387,203.

"The Use of In-Vessel Composting as a Treatment Technology for Hazardous Waste Minimization". Funded by Gulf Coast Hazardous Substance Research Center, June 1, 1991-April 30, 1994, \$107,471.

"Site Assessment." Funded by NIH for \$334,.650 for first 3 years. 1992-1996.

"Demonstration of the Degradation of Toxic Organics in Composted Municipal Solid Waste." Funded by Texas Water Commission for \$135,000 for two years, 1992-1994.

"A Preliminary Demonstration of the Use of In-Vessel Composting for Degradation of Waste Propellants." Sponsored by Day & Zimmermann, Inc. 1993. Funds amounted to \$18,138.

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“Water Use Efficiency and Wetting Patterns Associated with Directed Subsurface Irrigation.” Sponsored by Texas-Israel Exchange Program through the Texas Department of agriculture 1995-1996 Funds amount to \$27,770.

APPENDIX 2

Comprehensive Listing of Testimony by K. W. Brown

TRIAL TESTIMONY	DATE
25 Cause No. 27-CV-08-1912; <i>State of Minnesota, Plaintiff, v. Associated Medical Assurance Limited, et al., Defendants</i> in the District Court of Minnesota, Fourth Judicial District. Case involved the disposal of hazardous substances with industrial waste at the WDE, Oak Grove, and East Bethel Landfills and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	10/18/10 10/26/10
24 File No. 62-C7-05-012469; <i>State of Minnesota, Plaintiff, v. Evanston Insurance Co., et al., Defendants</i> in the District Court of Minnesota, Second Judicial District. Case involved the disposal of hazardous substances with industrial waste at the WDE Landfill and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	10/26/09
23 Civil Action No. 02-CV-3830; <i>Agere Systems, Inc., et al., Plaintiffs, vs. Advanced Environmental Technology Corporation, et al., Defendant</i> , in the United States District Court for the Eastern District of Pennsylvania. This case involved the alleged disposal of hazardous wastes at the Boarhead Farms Superfund Site in Bucks County, Pennsylvania. Retained by Handy & Harman Tube Co., Defendant	7/1/08
22 Case no. 04-C-296-2; <i>Lenora Perrine, et al., Plaintiffs vs. E.I. DuPont de Nemours and Company, et al., Defendants</i> , in the Circuit Court of Harrison County, West Virginia. This case involved the contamination of homes and properties with metal dust from the former Meadowbrook Smelter in Spelter, West Virginia. Retained by the Plaintiffs.	9/19-20/07 10/11-12/07
21 Case No. 03-CV-498-CVE-PJC; <i>Jimmy Dale Palmer, et al., Plaintiffs, v. Asarco Incorporated, et al., Defendants</i> in the United States District Court for the Northern District of Oklahoma. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Retained by the Plaintiffs.	7/30/07
20 Case no. 04-C-296-2; <i>Lenora Perrine, et al., Plaintiffs vs. E.I. DuPont de Nemours and Company, et al., Defendants</i> , in the Circuit Court of Harrison County, West Virginia. This case involved the contamination of homes and properties with metal dust from the former Meadowbrook Smelter in Spelter, West Virginia. Retained by the Plaintiffs.	5/1/06
19 Civil Action No. 95-CV-6400L, <i>Seneca Meadows, Plaintiff vs. ECI Liquidating, et al., Defendants</i> in the United States District Court, Western District of New York. This case involved claims against defendants concerning the disposal of hazardous substances in the Tantalo Landfill, Seneca Falls, New York. Retained by the Plaintiff.	6/21/05 to 6/23/05

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18	Civil Action No. 01:01-CV-890; <i>Lyondell Chemical Company, et al., Plaintiffs v. Albemarle Corporation, et al., Defendants</i> in the United States District Court for the Eastern District Of Texas, Beaumont Division. This case involved the disposal of waste containing hazardous substances and groundwater contamination at the Turtle Bayou Superfund in Liberty County, Texas. Retained by ExxonMobil, Defendant.	4/18/05
17	Cause No. 03-001121-CV; <i>Joseph Paul Horlen, et al., Plaintiffs, v. Robert S. Smith and Robo Investments, Inc., Defendants</i> in the District Court of Brazos County, Texas, 361st Judicial District. Case involved the subsurface loss of water from a man-made lake within a residential subdivision and the subsequent undercutting of riverbank along the Brazos River. Retained by the Plaintiffs.	6/17/04
16	Civil Action No. 98-CV-0838S (F); <i>W.R. Grace & Co.-Conn., Plaintiff, v. Zotos International, Inc., Defendant</i> in the United States District Court Western District of New York. Case involved the disposal of cosmetic waste at the Brewer Road Landfill in Waterloo County, and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	5/17/04 to 5/21/04
15	Civil Action No. 95-2097 <i>Interfaith Community Organization, et al., Plaintiffs v. Honeywell International, Inc. et al., Defendants</i> . In the United States District Court for the District of New Jersey. This case involved claims against the defendants concerning disposal of chromium waste at the Roosevelt Drive-In Site in Jersey City, New Jersey. Retained by W.R. Grace & Co., W.R. Grace Ltd. and ECARG, Inc., Plaintiffs.	1/28/03 to 1/29/03
14	Case No. 80-1589; <i>United States of America, Plaintiff, vs. City of Philadelphia, Plaintiff-Intervenor, vs. Union Corporation Metal Bank of America, et al., Defendants, vs. Consolidated Edison Company of New York, et al., Third Party Defendants</i> . In the United States District Court for the Eastern District of Pennsylvania. This case involved claims against the defendants concerning the release of PCBs from the Metal Bank/Cottman Avenue Site to the Delaware River. Retained by the Defendants.	08/29/02 to 09/05/02
13	Civil No. N-87-52 (PCD). <i>The B.F. Goodrich Company, et al., Plaintiffs v. Harold Murtha, et al., Defendants v. Risdon Corporation et al., Third Party Defendants</i> . In the United States District Court, District of Connecticut. Case involved characterization of hazardous substances in waste generated by industries, commercial establishments, and municipalities disposed at two landfills in Connecticut, Beacon Heights Landfills and Laurel Park Landfill, which were classified as Superfund sites. Retained by Plaintiffs Beacon Heights Coalition and Laurel Park Coalition.	01/05/98 to 01/09/98 and 01/12/98 to 01/13/98

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12	Docket Nos. CV-96-0564091S and CV-96-0564092S; <i>Oxford Tire Supply, Inc., Plaintiff v. Commissioner of the Department of Revenue Services, Defendant</i> . In the Superior Court, Judicial District of Hartford/New Britain at Hartford, Connecticut. Case involved tax issues associated with handling of hazardous materials as defined by Connecticut tax regulation. Primary area of testimony was leaching of hazardous substances from rubber tire waste. Retained by Plaintiffs.	12/18/97
11	Civil Action No. 292CV00674(JBA); <i>The Companies for Fair Allocation Group v. Axil Corporation, et al.</i> In the United States District Court for the District of Connecticut. Case involved question of hazardous waste disposal by the Dynamics Corporation of America (Waring Division) at the Barkhamsted-New Hartford Landfill Superfund site in Barkhamsted, Connecticut. Retained by the Plaintiffs.	6/13–14/96
10	Civil Action No. 93-CV-0090-B; <i>KN Energy, Inc., et al., v. Sinclair Oil Corp., d/b/a/ Little America Refining Co.</i> United States District Court, District of Wyoming. Case involved study of hydrocarbon and metals groundwater plume, which had migrated from the area of a refinery and adjacent terminal to a nearby neighborhood in Wyoming. Work involved study of the origin of the plume. Retained by the Plaintiff.	6/6/95
9	Cause No. CA-94-CI-05270; <i>John Gibson Trustee v. Exxon Corporation</i> . District Court, 225th Judicial District, Bexar County, Texas. Suit involved claim by property owners adjacent to an old refinery for damages due to contaminant migration onto their property from previous waste disposal operations at the closed refinery. Retained by the Defendant.	2/17/95 2/21/95
8	Docket No. N-87-52 (PCD), All Cases; <i>The B.F. Goodrich Company, et al., Plaintiffs v. Harold Murtha, et al., Defendants v. Risdon Corporation et al., Third Party Defendants</i> . United States District Court for the District of Connecticut. Suit concerning the hazardous nature of waste disposed at the Beacon Heights Landfill Superfund site. Retained by the Plaintiff.	12/15–19/94
7	Case No. 390-37213-SAF-11 and Case No. 390-37214-SAF-11, jointly administered Chapter 11; <i>In re: National Gypsum Company v. Aancor Holdings, Inc.</i> Suit involved groundwater contamination associated with Rolling Knolls Landfill. Retained by the U.S.A.	5/18–20/92 6/1/92 6/24/92
6	Case No. CIV-86-1401-P; <i>The United States of America v. Royal N. Hardage, et al., Advance Chemical Company, et al., v. ABCO, et al.</i> United States District Court for the Western District of Oklahoma. Enforcement of ROD concerning remediation of hazardous waste site. Retained by the Plaintiff.	10/27/89
5	<i>The United States of America, the State of New York, and UDC-Love Canal, Inc., v. Occidental Chemical Corp., Occidental Chemical Holding Corp., Occidental Petroleum Investment Co., Occidental Petroleum Corp., City of Niagara Falls, Niagara County Health Department, and the Board of Education of the City of Niagara Falls, Love Canal Landfill Superfund site.</i> United States District Court for the Western District of New York. Testimony on the mobility of organic pollutants through clay. Retained by the Plaintiff.	3/20–21/89

Comprehensive Listing of Testimony by K. W. Brown

4	Case No. 85-17210-C; <i>James L. Slaughter, et al., v. Farm and Home Savings, et al.</i> , and Case No. 86-48352; <i>Mike Fenimore, et al., v. Farm and Home Savings</i> . 151st Judicial District Court of Harris County, Texas. Case involved issues of land development and exposure to petrochemical wastes by residents in neighborhoods adjacent to the Brio/Dixie Oil Processors Superfund sites (Houston, Texas). Retained by the Plaintiffs.	12/6/89
3	<i>Barbara Lips v. Jacobs Oil Company</i> . Federal District Court in Corpus Christi, Texas. Testimony on the damages and reclamation results from oilfield drilling mud wastes. Retained by the Plaintiff.	1985
2	<i>Blaire v. Palmer Oil</i> . Texas District Court. Suit over the destruction of land resulting from oil exploration activities. Retained by the Plaintiff.	
1	<i>Jarvis L. Smoak v. Arkansas Louisiana Gas Company</i> . In the Texas District Court of Marshall, Texas. Contamination of soil and loss of trees due to oil spill. Retained by the Defendant.	

Comprehensive Listing of Testimony by K. W. Brown

DEPOSITION TESTIMONY

86	Cause No. 22052-10563, consolidated with Cause No. 22052-09367 and Cause No. 22052-09366; <i>Corby Baker, et al., Plaintiffs, v. Fluor Corporation, et al., Defendants</i> in the Missouri Circuit Court, Twenty-Second Judicial Court, State of Missouri. Case involved personal injury claims related to exposure to lead mining wastes. Retained by the Plaintiffs.	4/23/14
85	Case No. 1:09-CV-0228, DNH-DRH, consolidated with Case No. 1:11-CV-006; <i>Village of Stillwater, et al., Plaintiffs, v. General Electric Co., Defendants</i> in the United States District Court, Northern District of New York. Case involved contamination of the Hudson River with polychlorinated biphenyls. Retained by the Plaintiffs.	4/16/14
84	Cause No. 052-09605; <i>Charles A. Burnia, et al., Plaintiffs, v. Fluor Corporation, et al., Defendants</i> in the Circuit Court of St. Louis, Twenty-Second Judicial Circuit, State of Missouri. Case involved personal injury claims related to exposure to lead mining wastes. Retained by the Plaintiffs.	8/19/13
83	Cause No. 3:08-CV-00229; <i>Natural Resource Defense Council, et al., Plaintiffs, v. County of Dickson, Tennessee, et al., Defendants</i> in the United States District Court for the Middle District of Tennessee. Case involved the contamination of groundwater by contaminants disposed of in the Dickson County Landfill.	9/22/10
82	Cause No. 08-CV-0161; <i>Mary Ellen Hall, et al., Plaintiffs, v. Radiator Specialty Co., et al., Defendants</i> in the District Court of Galveston County, Texas, 212th Judicial District. Case involved the exposure to benzene from historical emissions from the Union Carbide Chemical Co. facility in Texas City, Texas. Retained by the Plaintiffs.	12/15/09
81	Cause No. 27-CV-08-1912; <i>State of Minnesota, Plaintiff, v. Associated Medical Assurance Limited, et al., Defendants</i> in the District Court of Minnesota, Fourth Judicial District. Case involved the disposal of hazardous substances with industrial waste at the WDE, Oak Grove, and East Bethel Landfills and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	10/28/09
80	Cause No. E-178,440; <i>Darla J. Lemaire, Individually and as the Independent Executrix of the Estate of Michael Lemaire, Deceased; and Logan Lemaire, Plaintiffs, vs. Berryman Products, Inc, et al., Defendants</i> . In the District Court of Jefferson County, Texas 172nd Judicial District. Retained by the Plaintiffs.	9/17/09
79	Cause No. GN-401028; <i>Sotero Carrillo, Jose Carmen Carrillo, Miguel Cruz, and Greg Fuller Plaintiffs v. Reichold, Inc., Defendants, Zurich American Insurance Co., Intervenor</i> . In the District Court of Travis County, Texas 98th Judicial District. Retained by the Plaintiffs.	2/21/08

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78	File No. 62-C7-05-012469; <i>State of Minnesota, Plaintiff, v. Evanston Insurance Co., et al., Defendants</i> in the District Court of Minnesota, Second Judicial District. Case involved the disposal of hazardous substances with industrial waste at the WDE Landfill and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	11/7/07
77	Case no. 04-C-296-2; <i>Lenora Perrine, et al., Plaintiffs vs. E.I. DuPont de Nemours and Company, et al., Defendants</i> , in the Circuit Court of Harrison County, West Virginia. This case involved the contamination of homes and properties with metal dust from the former Meadowbrook Smelter in Spelter, West Virginia. Retained by the Plaintiffs.	4/30-5/1/07
76	Civil Action No. 02-CV-3830; <i>Agere Systems, Inc., et al., Plaintiffs, vs. Advanced Environmental Technology Corporation, et al., Defendant</i> , in the United States District Court for the Eastern District of Pennsylvania. This case involved the alleged disposal of hazardous wastes at the Boarhead Farms Superfund Site in Bucks County, Pennsylvania. Retained by Handy & Harman Tube Co., Defendant	12/1/06 and 1/29/07
75	Case no. 04-C-296-2; <i>Lenora Perrine, et al., Plaintiffs vs. E.I. DuPont de Nemours and Company, et al., Defendants</i> , in the Circuit Court of Harrison County, West Virginia. This case involved the contamination of homes and properties with metal dust from the former Meadowbrook Smelter in Spelter, West Virginia. Retained by the Plaintiffs.	1/25-26/06 and 2/10/06
74	Cause No. 02-4162 JPG; <i>Chevron Environmental Management Company, Chevron Environmental Services Company, and Texaco Inc., Plaintiffs, v. Indian Refining I Limited Partnership (f/k/a Indian Refining Limited Partnership), et al, Defendants</i> in the United States District Court for the Southern District of Illinois. Case involved remediation and allocation of costs for the former Indian refinery in Lawrenceville, IL. Retained by the Plaintiff.	8/3/05
73	Cause No. 02-4162 JPG; <i>Chevron Environmental Management Company, Chevron Environmental Services Company, and Texaco Inc., Plaintiffs, v. Indian Refining I Limited Partnership (f/k/a Indian Refining Limited Partnership), et al, Defendants</i> in the United States District Court for the Southern District of Illinois. Case involved remediation and allocation of costs for the former Indian refinery in Lawrenceville, IL. Retained by the Plaintiff.	6/2/05
72	Civil Action No. 95-CV-6400L, <i>Seneca Meadows, Plaintiff vs. ECI Liquidating, et al., Defendants</i> in the United States District Court, Western District of New York. This case involved claims against defendants concerning the disposal of hazardous substances in the Tantalo Landfill, Seneca Falls, New York. Retained by the Plaintiff.	5/27/05
71	File No. C7-0310992; <i>State of Minnesota, Plaintiff, v. American Hardware Mutual Insurance Company, Defendants</i> in the District Court of Minnesota, Tenth Judicial District. Case involved the disposal of hazardous substances with industrial waste at Oak Grove and East Bethel Landfills and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	4/21/05

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70	Case No. 03-CV-327 (H) M; <i>Betty Jean Cole, et al., Plaintiffs, v. Asarco Incorporated, et al., Defendants</i> in the United States District Court for the Northern District of Oklahoma. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Retained by the Plaintiffs.	12/7/04
69	Case No. 03-CV-327 (H) M; <i>Betty Jean Cole, et al., Plaintiffs, v. Asarco Incorporated, et al., Defendants</i> in the United States District Court for the Northern District of Oklahoma. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Retained by the Plaintiffs.	10/22/04
68	Civil Action No. 01:01-CV-890; <i>Lyondell Chemical Company, et al., Plaintiffs v. Albemarle Corporation, et al., Defendants</i> in the United States District Court for the Eastern District Of Texas, Beaumont Division. This case involved the disposal of waste containing hazardous substances and groundwater contamination at the Turtle Bayou Superfund in Liberty County, Texas. Retained by ExxonMobil, Defendant.	7/8/04
67	Court File No. CT 02-016741; <i>State of Minnesota, by its Attorney General, Mike Hatch, Plaintiff, v. American Hardware Mutual Insurance Co., et al., Defendants</i> in the District Court of Minnesota, Fourth Judicial District. Case involved the disposal of hazardous substances with industrial waste at the WDE and St. Augusta Landfills and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	2/24/04
66	Civil Action No. 98-CV-0838S (F); <i>W.R. Grace & Co.-Conn., Plaintiff, V. Zotos International, Inc., Defendant</i> in the United States District Court Western District Of New York. Case involved the disposal of cosmetic waste at the Brewer Road Landfill in Waterloo County, and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	2/12/04
65	Case No. 00-01917 MRP (MANx); <i>Shell Chemical Co., et al., Plaintiffs, vs. The County of Los Angeles, et al., Defendants</i> in the United States District Court for the Central District of California; Case No. 00-1938 MRP (MANx); <i>Phillips Petroleum Co., et al., Plaintiffs, vs. The County of Los Angeles, et al., Defendants</i> in the United States District Court for the Central District of California; and Case No. 00-6420 MRP (MANx); <i>Atlantic Richfield Co., et al., Plaintiffs, vs. BKK Corporation, et al., Defendants</i> in the United States District Court for the Central District of California. These combined cases involved hazardous substances associated with municipal solid waste being deposited at Cal Compact Landfill. Retained by the Plaintiffs.	3/7/03

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64	Court File No. MC00-001819; <i>State of Minnesota, by its Attorney General, Mike Hatch, Plaintiff, v. Employers Insurance of Wausau, A Mutual Company, et al., Defendants</i> in the District Court of Minnesota, Fourth Judicial District. Case involved the disposal of hazardous substances with industrial waste at the Oak Grove Landfill and East Bethel Landfill in Anoka County, and the contamination of groundwater as a result of these disposal practices. For the Plaintiff.	12/17/02
63	Case No. 80-1589; <i>United States of America, Plaintiff, vs. City of Philadelphia, Plaintiff-Intervenor, vs. Union Corporation Metal Bank of America, et al., Defendants, vs. Consolidated Edison Company of New York, et al., Third Party Defendants</i> in the United States District Court for the Eastern District of Pennsylvania. This case involved claims against the defendants concerning the release of PCBs from the Metal Bank/Cottman Avenue Site to the Delaware River. Retained by the Defendants.	5/28/02
62	Civil Action No. H-98-0408 <i>United States of America, et al. vs. Atlantic Richfield Company, et al vs. Ashland, Inc., et al.</i> , in the United States District Court Southern District of Texas Houston Division. This case involved claims against defendants concerning waste disposal at Sikes Pit. Retained by ExxonMobil, Defendant.	6/26/01 - 6/27/01
61	Civil Action No. 95-2097 <i>Interfaith Community Organization, et al. v. Honeywell International, Inc. et al.</i> , in the United States District Court for the District of New Jersey. This case involved claims against the defendants concerning disposal of chromium waste at the Roosevelt Drive-In Site in Jersey City, New Jersey. Retained by W.R. Grace & Co., W.R. Grace Ltd. and ECARG, Inc., Defendants.	6/20/01
60	Civil Action No. 5:97CV00894; <i>United States of America v. Chrysler Corp. et al.</i> , in the United States District Court for the Northern District of Ohio. This case involved claims against the defendants concerning disposal of hazardous substances in the Krejci Dump Site. Retained by Minnesota Mining & Manufacturing Company, Defendant.	06/07/01
59	Civil Action No. G-96-493; <i>Janie Rivas, et al., vs. Monsanto Company, et al.</i> , in the United States District Court for the Southern district of Texas Galveston Division. This case involves modeling of emissions and air dispersion of hazardous substances emanating from petrochemical wastes processed and disposed of at the Brio/Dixie Oil Processors Superfund Sites in Houston, Texas and related exposures to children in adjacent neighborhoods. Retained by the Plaintiffs.	03/16/01
58	Case No. CIV-91-2067-PHX-PGR <i>Maurice McIntire, et al. vs. Motorola, Inc.</i> , in the United States District Court in and for the District of Arizona. This case involved a lawsuit by certain Phoenix residents concerning the VOC groundwater and ambient air plumes perpetrated by Motorola and the subsequent exposure of the litigants to the hazardous substances. This deposition involved waste management and waste handling.	5/31/00 - 6/2/00

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57	Case No. 98-CV0726 <i>Connie Lolley Klostermann, et al vs. Ultramar Diamond Shamrock Corporation, et al.</i> , in the 212th Judicial District Court, Galveston County, Texas. This case involved a lawsuit by the landowner concerning property damage resulting from leaking storage tank contamination. Retained by Diamond Shamrock, Defendant.	5/26/00
56	Case No. 97-6222 MRP (MANx) <i>Commercial Realty Projects, Inc., and L.A. Metromall LLC, vs. Atlantic Richfield Company, et al.</i> , in the United States District Court in for the Central District of California. This case involved hazardous substances associated with municipal solid waste being deposited at Cal Compact Landfill. Retained by the Defendants.	3/6/00
55	Case No. 93-055257 <i>Ralph L. Nichols, Jr., et al. vs. Monsanto Company, et al.</i> , in the 125th Judicial District Court of Harris County, Texas. This case involved contaminant migration via air, surface water, and groundwater media from the Dixie Oil Processors Superfund Site to adjacent athletic field. Retained by the Plaintiffs.	1/28/00
54	Case No. CIV-91-2067-PHX-PGR <i>Maurice McIntire, et al. vs. Motorola, Inc.</i> , in the United States District Court in and for the District of Arizona. This case involved a lawsuit by certain Phoenix residents concerning the VOC groundwater and ambient air plumes perpetrated by Motorola and the subsequent exposure of the litigants to the hazardous substances.	12/6/99 - 12/8/99
53	Case No. 89-4340 (JBS) <i>United States vs. Helen Kramer et al.</i> , In the United States District Court for the District of New Jersey. This case involved hazardous substance deposition into Kramer Landfill (Superfund Site) by defendants. Retained by lawyers for the plaintiff.	10/6/99
52	Case No. 92-034865; <i>James E. Barnet, Sr., et al., vs. Monsanto Company, et al.</i> In the District Court of Harris County, Texas, 80th District Court. This case involved former workers' claims concerning exposure to hazardous chemicals. Retained by the Plaintiffs.	4/28/99
51	Case No. 95C-1065; <i>Lemberger Sites Remediation Group, Plaintiff, v. A.M. Richter & Sons Co., et al., and White Consolidated Industries, Inc., Defendants</i> ; In the United States District Court Eastern District of Wisconsin. This case involved hazardous constituents in waste going to Lemberger Landfill (Superfund Site). Retained by the Plaintiff.	3/12/99
50	Case No. 98-459-A; <i>Lewie Byers; vs. Texaco Exploration and Production Inc. and Texaco Inc.</i> In the District Court of Smith County, Texas 7th Judicial District. This case involves claims of contamination due to releases of crude oil and fluids from oil field production activities. Retained by the Defendant.	1/22/99

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49	C.A. No. G-96-493; <i>Janie Rivas, et al., vs. Monsanto Company, et al.; Defendant</i> . In the United States District Court for the Southern district of Texas Galveston Division. This case involves modeling of emissions and air dispersion of hazardous substances emanating from petrochemical wastes processed and disposed of at the Brio/Dixie Oil Processors Superfund Sites in Houston, Texas and related exposures to children in adjacent neighborhoods. Retained by the Plaintiffs.	12/30/98
48	Cause No. 95-044151; <i>Rebecca Johnson, et al., and On Behalf of All Those Similarly Situated, Plaintiffs, vs. Exxon Company, U.S.A., et al., Defendant</i> . In the 61st Judicial District Court, Harris County, Texas. Case involved claims of contamination to a neighborhood near Carver Elementary school that was built over covered pits where oil began to surface in 1995. Retained by the Defendant.	7/24/98
47	Case 75524; <i>Clarice Friloux, et al., Plaintiffs, vs. Campbell Wells Corporation, et al., Defendants</i> . In the 17th Judicial District Court, Parish of Lafourche, Louisiana. Case involved claims of offsite air migration of hazardous substances purportedly associated with a non-hazardous oilfield waste disposal facility. Retained by the Defendants.	5/21/98
46	Case No. 93-004644; <i>Mike Adalis, et. al., Plaintiffs, vs. Neighborhood Development Corporation, et al, Defendants</i> . In the District Court of Harris County, Texas, 269th Judicial District. Case involved claims of groundwater and related drinking water well contamination attributable to 50 year old oil well blowout. Retained by the defendant Exxon.	2/13/98 and 7/8/98
45	Civil Action No. 95-514875-CE; <i>Grand Trunk Western Railroad, Incorporated and Star Oil Company, Inc., Plaintiffs vs. Union Oil Company of California, Wynkoop Oil Company, Clement Wynkoop, Secory Oil Company and Lewis Secory, Defendants and Union Oil Company and Clement Wynkoop, Counter-Plaintiffs/Cross-Plaintiffs vs. Secory Oil Company and Lewis Secory</i> . Case involved modeling of the transport and fate of hydrocarbon fuels, which leaked from storage, tanks at a terminal and allegedly migrated onto adjoining properties of plaintiffs. Retained by the Defendants.	5/22/97 and 6/2/97 to 6/3/97
44	Case No. 93-03044, <i>James W. Allen, III and Victoria Ann Allen, et al. Monsanto Company, et. al.</i> , and Case No. 93-14478, <i>Christopher Irwin and Jon H. Moore, et al.</i> , in the District Court of Harris County, Texas, 113th Judicial District. Case involved contaminant migration via air, surface water and groundwater media from the Dixie Oil Processors Superfund Site to adjacent children's athletic field. Retained by the Plaintiffs.	5/13/97
43	Civil Action 96C19S; <i>Junker Landfill v. United Waste</i> . In the U.S. District Court, Western District. Case involved study of hazardous substances in wastes generated by approximately 500 generators taken to Junker Landfill (Superfund Site). Retained by Plaintiffs.	2/28/97

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42	Cause No. A99,534; Joann <i>McKnight Lambert v. Melvin B. Etheredge, et al.</i> In the 70th District Court, Ector County, Texas. Case involved study of subsurface moisture condition and moisture migration through house slab. Retained by Plaintiff, Lambert.	1/29/97
41	Case No.: 2:92-CV-111; <i>Commercial Union Insurance Co., et. al., v. Cannelton Industries, Inc.</i> , In the United States District Court for the Western District of Michigan. Case involved claim against insurance company for environmental remediation cost recovery associated with chromium contamination of St. Marys River due to a fire at an old tannery plant. Retained by Defendant.	9/5/96
40	Civil Action No. BC015575; <i>Atlantic Richfield Company and ARCO Chemical Company v. Aetna Casualty and Surety Company of America, et. al.</i> ; Superior Court of the State of California for the County of Los Angeles. Case involved disputed claims for insurance coverage of environmental contamination at old refinery sites at Sand Springs, Oklahoma, and Prewitt, New Mexico. Retained by the Plaintiffs.	4/9/96 - 4/10/96
39	Civil Action No. 92-2-28065-5; <i>Aluminum Company of America and Northwest Alloys, Inc. v. Accident and Casualty Insurance Company, et al.</i> Superior Court of the State of Washington, In and For the County of King. Case involved disputed claims for insurance coverage of environmental contamination at three aluminum-manufacturing facilities across the country, and entailed extensive interpretation of historical aerial photographs of the facilities. Retained by the Plaintiffs.	2/5/96
38	Civil Action No. 87-4263(JHR); <i>General Electric Company v. Buzby Brothers Materials Handling Company, et al.</i> United States District Court for the District of New Jersey. Case involved recovery from commercial and municipal transporters of wastes of the costs for remediation of groundwater contamination at the site of the RCA-Buzby Landfill (Superfund Site) near Voorhees, New Jersey. Retained by the Plaintiff.	11/29/95
37	Civil Action No. 85-17210-G; <i>David L. Smithson et al., v. Monsanto Company, et. al.</i> , District Courts, 11th Judicial District, Harris County, Texas; and Civil Action No. 93-045095; <i>Thuy Thi Diep, et al., v. Monsanto Company, et al.</i> ; District Court, 55th Judicial District, Harris County, Texas. These consolidated cases involved the Brio Superfund Site and exposure of adjacent residents to hazardous chemicals in an old waste disposal site through air, soil, groundwater, surface water and drinking water pathways. Retained by Plaintiffs.	11/8/95
36	Case No. 94-C-1025; <i>City and County of Denver et al., v. Alumet et al.</i> United States District Court for the District of Colorado. Case involving the Lowry Landfill Superfund site in Denver, Colorado, and the apportionment of remediation costs due to contamination from co-disposal of municipal and industrial wastes. Retained by the Defendants.	8/17/95

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35	Cause No. 15,527; <i>Gary David Harding et al., v. Browning-Ferris Industries, Inc., et. al.</i> , District Court, 229th Judicial District, Duval County, Texas. Case involving personal injury and property damage from industrial waste migration from a landfill. Retained by the Plaintiffs.	6/22/95
34	Case No. 93-03674-CA; <i>In Re: Hipps Road Litigation</i> . Circuit Court of the Fourth Judicial Circuit In and For Duval County, Florida. Suit regarding contamination of drinking water wells from hazardous waste leaking from a landfill. Retained by the Plaintiffs.	5/26/95
33	Cause No. 94-1499-A; <i>Ardith Cavallo, et al., v. Star Enterprise, et al.</i> United States District Court for the Eastern District of Virginia; Alexandria Division. Retained by the Defendant.	5/5/95
32	Case No. CJ-92-3515-62; <i>N.C. Corff Partnership, Ltd., et al., v. Oxy USA, Inc.</i> Oklahoma County District Court. Retained by the Defendant.	4/26/95
31	Civil Action No. 93-CV-0090-B; <i>KN Energy, Inc. et al., v. Sinclair Oil Corporation, d/b/a Little America Refining Co.</i> United States District Court, District of Wyoming. Retained by the Plaintiff.	4/19/95
30	Cause No. CV-90-75-BU-PGH; <i>Atlantic Richfield Co. v. Torger L. Oaas et. al.</i> , United States District Court for the District of Montana, Butte Division. Retained by the Plaintiff.	11/7/94 11/11/94
29	Cause No. 92-032723; <i>Clear Creek Independent School District v. Farm & Home Savings Association, et. al.</i> , District Court 11th Judicial District, Harris County, Texas. Retained by the Plaintiffs.	10/5/94
28	Cause No. CW 93-39-BU-PGH; <i>Montana Resources, Inc. and Dennis R. Washington v. Atlantic Richfield Company</i> . United States District Court for the District of Montana, Butte Division. Retained by the Defendants.	9/9/94
27	Cause No. 31,692-S; <i>Frank J. Kramr, Individually and as Parents and next friends of Sarah Kramr, a minor, v. Eastern Pipeline Company</i> . District Court 329th Judicial District, Wharton County, Texas. Retained by the Plaintiffs.	9/7/94
26	Cause No. 85-17210-G; <i>Gary L. Abel, et al., and David L. & Angell R. Smithson v. Monsanto, et al.</i> District Court 151st Judicial District, Harris County. Suit concerning the Brio Superfund site. Retained by the Plaintiffs.	5/18/94
25	Case No. 92-CI-15104; <i>Lionel Laguna and wife, Celia Laguna v. Exxon Corporation United States of America</i> . District Court, 57th Judicial District, Bexar County, Texas. Retained by the Defendant.	12/10/93
24	Civil Action No. SA-92-CA-0616; <i>Jesse Sherrod, et al., v. U.S.A.</i> Western District Court of Texas, San Antonio Division. Suit regarding the alleged leakage of chlorinated solvents from an air force base to surrounding areas. Retained by the Plaintiffs.	4/9/93

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23	Case No. 390-37213-SAF-11 and Case No. 390-37214-SAF-11, jointly administered Chapter 11; <i>In re: National Gypsum Company v. Aancor Holdings, Inc.</i> Retained by the U.S.	6/24/92 5/18-20/92 4/26-27/92
22	Cause No. 85-17210-F; <i>Andrea Acosta, et al., v. Farm & Home Savings Association</i> . District Court of Harris County, Texas. Suit concerning Brio (Houston, Texas) Superfund site. Retained by the Plaintiffs.	5/13/92
21	Civil Action No. CIV-91-655-W; <i>Larry and Judy Bentley v. Koch Gathering Systems, Inc.</i> Suit concerning the remediation of an oil spill. Retained by Koch.	2/21/92 1/16/92
20	Cause No. 90C0468; <i>Billy White, et. al., v. BP Chemicals, Inc. et. al.</i> , District Court of Brazoria County, Texas.	1/7/92
19	File No. 3-90-312; <i>Kenneth M. Anderson as Personal Representative of the Estate of Fred W. Hedberg v. City of Minnetonka et al.</i> United States District Court for the District of Minnesota, Third Division. Retained by the Plaintiff.	7/16/91
18	Consolidated Civil Action No. 83-C-2379; <i>United States of America v. Shell Oil Company</i> , consolidated with Civil Action No. 89-C-1646, <i>United States of America v. State of Colorado</i> . U.S. District Court for the State of Colorado. Retained by the U.S.A.	4/22-23/91
17	Case No. 485,475; <i>Billy Fred Platt and Paula Kay Callahan v. Bio-Gro Systems, Inc. and the City of Austin</i> . 353rd District Court, Travis County, Texas. Contamination to soil resulting from sewage sludge application. Retained by Mr. Platt.	3/28/91
16	Cause No. C88-0190-B consolidated with C89-0153-B; <i>Sinclair Oil Corporation v. James S. Scherer, et al., and United States of America v. Sinclair Oil Corporation</i> . United States District Court for the District of Wyoming. Suit concerning alleged contamination from refinery operations. Retained by the United States.	4/27/90
15	Case No. 63,993; <i>Lawrence and Verna Postier v. Laidlaw Waste Systems, Inc., et al.</i> , 240th Judicial District Court for Fort Bend County, Texas. Personal injury as a result of methane gas migration from a landfill. Retained by the Plaintiff.	1/9/90 12/21/89
14	Cause No. 1-88-0141-W; <i>Watts and wife v. Koch Gathering Systems, Inc.</i> United States District Court, North Texas Division, Abilene. Suit concerning land damages resulting from an oil spill. Retained by Koch.	8/23/89
13	<i>The United States of America, the State of New York, and UDC-Love Canal, Inc., v. Occidental Chemical Corp., Occidental Chemical Holding Corp., Occidental Petroleum Investment Co., Occidental Petroleum Corp., City of Niagara Falls, Niagara County Health Department, and the Board of Education of the City of Niagara Falls, Love Canal Landfill</i> . United States District Court for the Western District of New York. Deposition on the mobility of organic pollutants through clay. Retained by the Plaintiff.	3/20-21/89

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12	Case No. 85-17210-C; <i>James L. Slaughter, et al., v. Farm and Home Savings, et al.</i> , and Case No. 86-48352; <i>Mike Fenimore, et al., v. Farm and Home Savings</i> . 151st Judicial District Court of Harris County, Texas. Damages and clean-up of Brio (Houston, Texas) Superfund site. Retained by the Plaintiffs.	1/13/89 11/11/88
11	Case No. CIV-86-1401-P; <i>The United States of America v. Royal N. Hardage, et al., Advance Chemical Company, et al., v. ABCO, et al.</i> United States District Court for the Western District of Oklahoma. Enforcement of ROD concerning remediation of hazardous waste site. Retained by the Plaintiff.	6/13/88 12/2/88
10	Case No. H-86-2629; <i>United States of America v. International Shoe Company</i> . RCRA compliance for solvent waste surface impoundment. Retained by the U.S.A.	3/5/88
9	<i>Joseph Edward Powell, et al., v. Pulte, et. al.</i> , District Court of Harris County, Texas. Vol. 1 No. 84-75865.	11/11/88
8	Case No. M-85-191-CA; <i>Sammy C. McElroy and wife, Kathleen Ann McElroy v. Getty Oil Company and Texaco, Inc.</i> United States District Court for the Eastern District of Texas, Marshall Division; and Case No. CA-93-54; <i>Sammy C. McElroy and wife, Kathleen Ann McElroy v. Halliburton Company</i> . District Court In and For Panola County, Texas. Fish kill resulting from acid drainages from dried pond bottom mud. Retained by the Defendant.	9/5/86 11/7/86
7	Case No. 84-1112-A; <i>Gary L. Overstreet and Glenda Ann Overstreet v. Texas Oil and Gas Corporation and Delhi Gas Pipeline Corporation</i> . 14th Judicial District Court of Dallas County, Texas. Suit concerning alleged sulfur contamination of soil, forage, and its potential impact on the productivity of dairy cattle. Retained by the Defendant.	5/2/86
6	Case No. 86-6-8186; <i>Mobil Producing Texas and New Mexico v. Burr Stafford, et al.</i> 24th Judicial District Court In and For Jackson County, Texas. Testimony on the damages to soil and crops caused by oil production activities. Retained by the Plaintiff.	3/11/86
5	<i>Clifford and Sandra Schiesl, et al., and Orrin Hagen v. Uniroyal, Inc., and Waste Management of Wisconsin, Inc. v. City of Stoughton, et al., v. Richard H. Sundby, et al.</i> Circuit Court for the State of Wisconsin, Dane County. Contribution of municipal waste constituents to ground water contamination of the Hagen Landfill (Superfund Site) in Dane County, Wisconsin. Retained by Uniroyal.	10/17/86
4	<i>Bagwell Greenhouse v. Ball Seed Company</i> . Suit over loss of crops due to contaminated plant growth mixture. Retained by the Defendant.	
3	<i>French v. Voluntary Purchasing Groups, Inc.</i> Suit over the loss of cattle and the contamination of pasture land with arsenic. Retained by the Defendant.	
2	<i>Rader and Carpenter v. Texas-New Mexico Pipeline Company</i> . Damage to soil, trees, and pasture due to oil spill down creek channel. Retained by the Defendant.	3/11/88

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- 1 *Stronglite Products Company v. Frit Industries.* Suit over the sale of products that contaminated plant growth mixture. Retained by the Plaintiff.

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REGULATORY HEARING TESTIMONY

26	Testimony at a hearing of the South Carolina Department of Health and Environmental Protection regarding the GSX landfill. Retained by the Opposition.	3/93 2/93
25	In the matter of the application of the North Texas Municipal Water District to Amend Solid Waste Permit No. 568A	2/15/93
24	Testimony at a hearing on a proposed permit amendment regarding the City of McKinney (TX) Landfill. Retained by the Opposition.	1/27/93
23	Testimony at hearings of the Public Utility Commission of Texas regarding the Lon C. Hill-Coletto Creek 345 kv Transmission Line. Retained by the Applicant.	6/1/92 5/92 1990
22	Testimony at a hearing to review an amendment to expand the City of Waco (TX) Landfill. Retained by the Opposition.	1/23/91
21	Testimony at hearing regarding the siting of the Cherokee County Landfill (TX) near an aquifer recharge area. Retained by the Opposition.	9/21–22/88
20	Testimony at permit hearing regarding the Green Valley Environmental Corporation Landfill in Greenup County, Kentucky, regarding suitable siting criteria for a landfill. Retained by opposing parties Clarence Clay, Janet Brown, et. al.	9/88
19	Application of Metropolitan Waste Systems for a Landfill.	7/27/88
18	Application of Laidlaw Waste Systems, Inc. before the Regional Pollution Control Facility Siting Committee of the McHenry County Board.	6/17/87
17	Testimony at a hearing of the Wayne County Board of Commissioners (IL) on operation and maintenance of landfills and associated problems that can impact the environment.	7/15–18/86
16	Testimony at a hearing to review a Browning-Ferris Industries municipal landfill (TX) permit application. Retained by the Tri-County Civic Association.	11/9/83
15	Testimony at an administrative hearing in Illinois on the criteria to be used to ban organic chemicals from landfills.	11/1/83
14	Testimony at hearings held by the Texas Railroad Commission regarding the Texas Municipal Power Agency. Retained by TMPA.	1980
13	Testimony at a permit hearing regarding a proposed Chemical Waste Management landfill in Lake Charles, Louisiana.	1978
12	Testimony at a hearing to review a Browning-Ferris Industries municipal landfill (TX) permit application. Retained by the Tri-County Civic Association.	11/9/83
11	Testimony at EPA hearing on Chemical Waste Management Part B application for hazardous waste site at Elmiel, Alabama. Comments on permit deficiencies. Retained by the Opposition.	

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- 10 Testimony at an administrative hearing on the location of a Florida landfill in deep sandy soils. Retained by Citizens for a Clean Environment.
- 9 Testimony at a hearing on the State of Florida's alternative landfill liner designs. Retained by MFM Environmental.
- 8 Testimony at a hearing of the Jefferson County Board of Commissioners (IL) on the siting of a proposed landfill. Retained by the Opposition.
- 7 Testimony at a hearing of the Iniquois County Board of Commissioners (IL) on the siting of a proposed municipal waste in water table. Retained by the Opposition.
- 6 Testimony at a permit hearing on the land treatment of industrial wastes at the Exxon Chemical-Rollins Environmental facility in Baton Rouge, Louisiana. Retained by Exxon and Rollins.
- 5 Testimony on pond design and assessment of offsite environmental risks at the USPCI facility in Oklahoma. Retained by USPCI.
- 4 Testimony at a hearing of the Texas Railroad Commission regarding revocation of a permit for drilling mud disposal operations which had overflowed onto adjacent soil. Retained by the Opposition.
- 3 Testimony at a hearing of the Texas Water Commission regarding the land treatment of industrial wastes by Conservation Services, Inc. Retained by the Applicant.
- 2 Testimony at a hearing of the Texas Water Commission concerning the Liberty Waste Disposal Company landfill to be located near Anahuac, Texas. Retained by the Opposition.
- 1 Testimony at a hearing of the Texas Water Commission regarding a zero discharge permit for the irrigation disposal of treated sewage effluent. Retained by Upland Industries.

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LEGISLATIVE HEARING TESTIMONY

6	Testimony at a hearing of the Texas House of Representatives, Environmental Affairs Committee in April 1987, on the need for legislation to set up a waste management plan for the state.	4/87
5	Testimony at a hearing of the Texas Governor's Taskforce on Oil Spills in February 1985, on the fate of oil spill debris, and disposal technology options.	2/85
4	Testimony at a hearing of the Texas Governor's Taskforce on Hazardous Waste in November 1984, on the effectiveness of landfills for disposal technology.	11/84
3	Testimony at a hearing of the Texas Governor's Taskforce on Hazardous Waste in June 1984, on the impact of organic chemicals on the permeability of soils.	6/84
2	Testimony at a hearing of the U.S. House of Representatives, Science and Technology Committee in November 1982, on the adequacy of EPA's liquid management system to protect groundwater at hazardous waste landfills.	11/82
1	Testimony at a hearing of the Texas House of Representatives, Environmental Affairs Committee in April 1982, on the impact of organic chemicals on the permeability of clay liners.	4/82

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EXPERT WITNESS REPORTS/AFFIDAVITS

100	Case No. 1:09-CV-0228, DNH-DRH, consolidated with Case No. 1:11-CV-006; <i>Village of Stillwater, et al., Plaintiffs, v. General Electric Co., Defendants</i> in the United States District Court, Northern District of New York. Case involved contamination of the Hudson River with polychlorinated biphenyls. Rebuttal Report. Retained by the Plaintiffs.	2/14/14
99	Case No. 1:09-CV-0228, DNH-DRH, consolidated with Case No. 1:11-CV-006; <i>Village of Stillwater, et al., Plaintiffs, v. General Electric Co., Defendants</i> in the United States District Court, Northern District of New York. Case involved contamination of the Hudson River with polychlorinated biphenyls. Expert Report. Retained by the Plaintiffs.	9/20/13
98	Cause No. 3:08-CV-00229; <i>Natural Resource Defense Council, et al., Plaintiffs, v. County of Dickson, Tennessee, et al., Defendants</i> in the United States District Court for the Middle District of Tennessee. Case involved the contamination of groundwater by contaminants disposed of in the Dickson County Landfill. Expert Report. Retained by the Plaintiffs.	8/6/10
97	Cause No. 08-CV-0161; <i>Mary Ellen Hall, et al., Plaintiffs, v. Radiator Specialty Co., et al., Defendants</i> in the District Court of Galveston County, Texas, 212th Judicial District. Case involved the exposure to benzene from historical emissions from the Union Carbide Chemical Co. facility in Texas City, Texas. Expert Report. Retained by the Plaintiffs.	11/6/09
96	Cause No. E-178,440; <i>Darla J. Lemaire, et al., Plaintiffs, v. Berryman Products, et al., Defendants</i> in the District Court of Jefferson County, Texas, 172nd Judicial District. Case involved the exposure to benzene from on-going emissions from the Huntsman Petrochemical facility in Port Neches, Texas. Expert Report. Retained by the Plaintiffs.	7/24/09
95	Civil Action No. 04-C-465; <i>Virdie Allen, et al., Plaintiffs, v. Monsanto Company, et al., Defendants</i> in the Circuit Court of Putnam County, West Virginia. Case involved the contamination of communities with dioxins from the emissions from the former Monsanto facility in Nitro, West Virginia. Affidavit. Retained by the Plaintiffs.	8/19/08
94	Docket No. L-13345-91; <i>Pennsauken Solid Waste Management Authority, et al., Plaintiff, v. New Jersey Department of Environmental Protection, et al., Defendants</i> in the Superior Court of New Jersey, Camden County: Law Division. Case involved disposal of hazardous substances in the commercial and industrial wastes at the Pennsauken Landfill in Camden County, New Jersey and the contamination of groundwater as a result of these disposal practices. Expert Report. Retained by Third-Party Defendant Cooper Industries, Inc.	7/18/08

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93	Cause No. GN-04-001028; <i>Sotero Carrillo, Jose Carmen Carrillo, Miguel Cruz, and Greg Fuller and A&B Construction, Inc., Plaintiffs, v. Reichold, Inc., Defendants, Zurich American Insurance Co., Intervenor.</i> In the District Court of Travis County, Texas 98th Judicial District. Affidavit. Retained by the Plaintiffs.	3/26/08
92	Case No. 05-21207 Chapter 11 (Jointly Administered); In re: <i>ASARCO LLC, et al.</i> , in the United States Bankruptcy Court for the Southern District of Texas, Corpus Christi Division. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Expert Rebuttal Report. Retained by the Plaintiffs.	2/4/08
91	Case No. 05-21207 Chapter 11 (Jointly Administered); In re: <i>ASARCO LLC, et al.</i> , in the United States Bankruptcy Court for the Southern District of Texas, Corpus Christi Division. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Expert Report. Retained by the Plaintiffs.	11/15/07
90	Case No. 03-CV-498-CVE-PJC; <i>Jimmy Dale Palmer, et al., Plaintiffs, v. Asarco Incorporated, et al., Defendants</i> in the United States District Court for the Northern District of Oklahoma. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Affidavit. Retained by the Plaintiffs.	6/15/07
89	File No. 62-C7-05-012469; <i>State of Minnesota, Plaintiff, v. Evanston Insurance Co., et al., Defendants</i> in the District Court of Minnesota, Second Judicial District. Case involved the disposal of hazardous substances with industrial waste at the WDE Landfill and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	6/8/07
88	Case No. 03-CV-498-CVE-PJC; <i>Jimmy Dale Palmer, et al., Plaintiffs, v. Asarco Incorporated, et al., Defendants</i> in the United States District Court for the Northern District of Oklahoma. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Affidavit. Retained by the Plaintiffs.	6/4/07
87	Case no. 04-C-296-2; <i>Lenora Perrine, et al., Plaintiffs vs. E.I. DuPont de Nemours and Company, et al., Defendants</i> , in the Circuit Court of Harrison County, West Virginia. This case involved the contamination of homes and properties with metal dust from the former Meadowbrook Smelter in Spelter, West Virginia. Retained by the Plaintiffs.	4/2/07

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86	Civil Action No. 02-CV-3830; <i>Agere Systems, Inc., et al., Plaintiffs, vs. Advanced Environmental Technology Corporation, et al., Defendant</i> , in the United States District Court for the Eastern District of Pennsylvania. This case involved the alleged disposal of hazardous wastes at the Boarhead Farms Superfund Site in Bucks County, Pennsylvania. Retained by Handy & Harman Tube Co., Defendant.	9/28/06
85	Cause No. GN-04-001028; <i>Sotero Carrillo, Jose Carmen Carrillo, Miguel Cruz, and Greg Fuller and A&B Construction, Inc., Plaintiffs, v. Reichold, Inc., Defendants, Zurich American Insurance Co., Intervenor</i> . In the District Court of Travis County, Texas 98th Judicial District. Retained by the Plaintiffs.	8/29/06
84	Court File No. 94-CQ-57578-CM; Ontario Superior Court of Justice between: <i>Frank Augustine, et al., Plaintiffs, and INCO Limited, Defendant</i> . This case involved claims of contamination and economic loss as a result of emissions from the former nickel smelter in Port Colborne, Ontario. Expert Report. Retained by the Defendant.	5/1/06
83	Case No. 3:98-CV-3601; <i>Cargill, Inc., et al., Plaintiffs, v. ABCO Construction, Inc., et al., Defendant</i> , in the United States District Court for the Southern District of Ohio, Western Division. This case involved claims of the disposal of hazardous substances in the former Valleycrest Landfill and the subsequent contamination of the Great Miami Aquifer. Expert Report. Retained by the Plaintiffs.	3/1/06
82	Case no. 04-C-296-2; <i>Lenora Perrine, et al., Plaintiffs vs. E.I. DuPont de Nemours and Company, et al., Defendants</i> , in the Circuit Court of Harrison County, West Virginia. This case involved claims of contamination of homes and properties with metal dust from the former Meadowbrook Smelter in Spelter, West Virginia. Rebuttal Report. Retained by the Plaintiffs.	2/28/06
81	Court File No. 94-CQ-57578-CM; Ontario Superior Court of Justice between: <i>Frank Augustine, et al., Plaintiffs, and INCO Limited, Defendant</i> . This case involved claims of contamination and economic loss as a result of emissions from the former nickel smelter in Port Colborne, Ontario. Expert Report. Retained by the Defendant.	2/16/06
80	Case no. 04-C-296-2; <i>Lenora Perrine, et al., Plaintiffs vs. E.I. DuPont de Nemours and Company, et al., Defendants</i> , in the Circuit Court of Harrison County, West Virginia. This case involved claims of contamination of homes and properties with metal dust from the former Meadowbrook Smelter in Spelter, West Virginia. Expert Report. Retained by the Plaintiffs.	11/11/05
79	Civil No. 95-2907 (DMC); <i>Interfaith Community Organization, et al., Plaintiffs vs. Honeywell International Inc., et al., Defendants</i> in the United States Court of Appeals for the Third Circuit. This case involved claims against the defendants concerning disposal of chromium waste at the Roosevelt Drive-In Site in Jersey City, New Jersey. Declaration. Retained by Honeywell, Defendant.	10/05/05

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78	Cause No. L-02-0087-CV-A; <i>Betty Waldean Woelfel, et al., Plaintiffs, vs. Intercontinental Energy Corporation d/b/a IEC Corp. of Texas and Westinghouse Electric Company, L.L.C., Defendants</i> in the District Court of Live Oak County, Texas, 36th Judicial District. Case involved the remediation and release of land associated with the Lamprecht and Zamzow ISL Uranium mine sites. Supplemental Affidavit. Retained by Defendant Viacom.	8/8/05
77	Cause No. L-02-0087-CV-A; <i>Betty Waldean Woelfel, et al., Plaintiffs, vs. Intercontinental Energy Corporation d/b/a IEC Corp. of Texas and Westinghouse Electric Company, L.L.C., Defendants</i> in the District Court of Live Oak County, Texas, 36th Judicial District. Case involved the remediation and release of land associated with the Lamprecht and Zamzow ISL Uranium mine sites. Affidavit. Retained by Defendant Viacom.	7/29/05
76	Cause No. 02-4162 JPG; <i>Chevron Environmental Management Company, Chevron Environmental Services Company, and Texaco Inc., Plaintiffs, v. Indian Refining I Limited Partnership (f/k/a Indian Refining Limited Partnership), et al, Defendants</i> in the United States District Court for the Southern District of Illinois. Case involved remediation and allocation of costs for the former Indian refinery in Lawrenceville, IL. Affidavit. Retained by the Plaintiff	7/19/05
75	Case No. 03-CV-327 (H) M; <i>Betty Jean Cole, et al., Plaintiffs, v. Asarco Incorporated, et al., Defendants</i> in the United States District Court for the Northern District of Oklahoma. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Affidavit. Retained by the Plaintiffs.	5/27/05
74	Civil Action No. 95-CV-6400L, <i>Seneca Meadows, Plaintiff vs. ECI Liquidating, et al., Defendants</i> in the United States District Court, Western District of New York. This case involved claims against defendants concerning the disposal of hazardous substances in the Tantalo Landfill, Seneca Falls, New York. Retained by the Plaintiff.	5/10/05
73	Cause No. 02-4162 JPG; <i>Chevron Environmental Management Company, Chevron Environmental Services Company, and Texaco Inc., Plaintiffs, v. Indian Refining I Limited Partnership (f/k/a Indian Refining Limited Partnership), et al, Defendants</i> in the United States District Court for the Southern District of Illinois. Case involved remediation and allocation of costs for the former Indian refinery in Lawrenceville, IL. Retained by the Plaintiff	5/2/05
72	File No. C7-0310992; <i>State of Minnesota, Plaintiff, v. American Hardware Mutual Insurance Company, Defendants</i> in the District Court of Minnesota, Tenth Judicial District. Case involved the disposal of hazardous substances with industrial waste at Oak Grove and East Bethel Landfills and the contamination of groundwater as a result of these disposal practices. Retained by the Plaintiff.	4/11/05

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71	Cause No. C200300273 <i>Judy Miller, Stan Miller, Deanna Aureli, Brent Aureli, and Nicholas Aureli v Blue Haven Pool, Defendant</i> in the Texas Judicial Court of Johnson County. Case involved claims against the defendant regarding the installation of a swimming pool, and a broken septic sewer line. Retained by the Defendant.	11/22/04
70	Case No. 03-CV-327 (H) M; <i>Betty Jean Cole, et al., Plaintiffs, v. Asarco Incorporated, et al., Defendants</i> in the United States District Court for the Northern District of Oklahoma. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Expert Rebuttal Report. Retained by the Plaintiffs.	10/28/04
69	Nos. 03-2760, 03-3037 & 03-3585; <i>Interfaith Community Organization, et al., Plaintiffs vs. Honeywell International Inc., et al., Defendants</i> in the United States Court of Appeals for the Third Circuit. This case involved claims against the defendants concerning disposal of chromium waste at the Roosevelt Drive-In Site in Jersey City, New Jersey. Affidavit. Retained by W.R. Grace & Co., W.R. Grace Ltd. and ECARG, Inc., Defendants.	6/25/04
68	Civil Action No. 01:01-CV-890; <i>Lyondell Chemical Company, et al., Plaintiffs v. Albemarle Corporation, et al., Defendants</i> in the United States District Court for the Eastern District Of Texas Beaumont Division. This case involved the disposal of waste containing hazardous substances and groundwater contamination at the Turtle Bayou Superfund in Liberty County, Texas. Supplemental Report. Retained by ExxonMobil, Defendant.	5/14/04
67	Case No. 94 CV 012385; <i>Employers Insurance of Wausau, A Mutual Company, Plaintiffs, v. Newell Co., Defendants</i> in the State of Wisconsin Circuit Court for Milwaukee County. Case involved characterization of waste streams and the hazardous constituent content of waste streams produced by the Newell Co. subsidiaries, as well as the disposal of hazardous constituents into municipal landfills by the Newell Co. subsidiaries. Expert Report. Retained by the Defendants.	5/3/04
66	Cause No. 03-001121-CV; <i>Joseph Paul Horlen, et al., Plaintiffs, v. Robert S. Smith and Robo Investments, Inc., Defendants</i> in the District Court of Brazos County, Texas, 361st Judicial District. Case involved the subsurface loss of water from a man-made lake within a residential subdivision and the subsequent undercutting of riverbank along the Brazos River. Affidavit. Retained by the Plaintiffs.	4/29/04

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65	Case No. 03-CV-327 (H) M; <i>Betty Jean Cole, et al., Plaintiffs, v. Asarco Incorporated, et al., Defendants</i> in the United States District Court for the Northern District of Oklahoma. Case involved an evaluation of the Tar Creek Superfund site and the subsequent assessment and evaluation of lead contamination and lead transport pathways in the communities of Picher and Cardin, Oklahoma, including the impacts of lead exposure to the children within these communities. Expert Report. Retained by the Plaintiffs.	4/12/04
64	Cause No. 03-001121-CV; <i>Joseph Paul Horlen, et al., Plaintiffs, v. Robert S. Smith and Robo Investments, Inc., Defendants</i> in the District Court of Brazos County, Texas, 361st Judicial District. Case involved the subsurface loss of water from a man-made lake within a residential subdivision and the subsequent undercutting of riverbank along the Brazos River. Expert Opinion. Retained by the Plaintiffs.	3/5/04
63	Docket No. CWA-06-2003-4805; <i>BP Pipelines (North America) Inc., Respondent, v. United States Environmental Protection Agency Region 6</i> . Case involved the subsurface release of crude oil from a pipeline at a site near Mertzon, Texas. Declaration. Retained by the Respondent.	2/6/04
62	Civil Action No. 95-2097; <i>Interfaith Community Organization, et al., vs. Honeywell International Inc., et al.</i> , in the United States District Court for the District of New Jersey. This case involved claims against the defendants concerning disposal of chromium waste at the Roosevelt Drive-In Site in Jersey City, New Jersey. Affidavit. Retained by W.R. Grace & Co., W.R. Grace Ltd. and ECARG, Inc., Defendants.	1/9/04
61	Civil Action No. 01:01-CV-890; <i>Lyondell Chemical Company, et al., Plaintiffs v. Albemarle Corporation, et al., Defendants</i> in the United States District Court for the Eastern District Of Texas Beaumont Division. This case involved the disposal of waste containing hazardous substances and groundwater contamination at the Turtle Bayou Superfund in Liberty County, Texas. Expert Witness Report. Retained by ExxonMobil, Defendant.	12/19/03
60	File No. CT 02-016741; <i>State of Minnesota, by its Attorney General, Mike Hatch, Plaintiff, v. American Hardware Mutual Insurance Company, et al., Defendants</i> in the District Court of Minnesota, Fourth Judicial District. Case involved the breach of the asphalt seal in the Hazardous Waste Disposal Pit at the Waste Disposal Engineering Landfill in Anoka County contributed to the groundwater contamination in the vicinity of the site. Affidavit. Retained by the Plaintiff.	12/19/03
59	Civil Action No. 95-2097; <i>Interfaith Community Organization, et al., vs. Honeywell International Inc., et al.</i> , in the United States District Court for the District of New Jersey. This case involved claims against the defendants concerning disposal of chromium waste at the Roosevelt Drive-In Site in Jersey City, New Jersey. Affidavit. Retained by W.R. Grace & Co., W.R. Grace Ltd. and ECARG, Inc., Defendants.	12/3/03

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58	Docket No. CWA-06-2003-4805; <i>BP Pipelines (North America) Inc., Respondent, v. United States Environmental Protection Agency Region 6</i> . Case involved the subsurface release of crude oil from a pipeline at a site near Mertzon, Texas. Expert Witness Report. Retained by the Respondent.	11/21/03
57	Civil Action No. 95-2097; <i>Interfaith Community Organization, et al., Plaintiffs vs. Honeywell International Inc., et al., Defendants</i> in the United States District Court for the District of New Jersey. This case involved claims against the defendants concerning disposal of chromium waste at the Roosevelt Drive-In Site in Jersey City, New Jersey. Declaration. Retained by W.R. Grace & Co., W.R. Grace Ltd. and ECARG, Inc., Defendants.	11/13/03
56	Civil Action No. 95-CV-6400L; <i>Seneca Meadows, Inc., et al., Plaintiffs, v. ECI Liquidating, Inc., et al., Defendants</i> in The United States District Court Western District Of New York. Case involved the disposal of industrial and domestic waste at the Tantalo Landfill in Seneca County. Expert Witness Report. Retained by the Plaintiff.	10/17/03
55	Civil Action No. 98-CV-0838S (F); <i>W.R. Grace & Co.-Conn., Plaintiff, V. Zotos International, Inc., Defendant</i> in the United States District Court Western District Of New York. Case involved the disposal of cosmetic waste at the Brewer Road Landfill in Waterloo County, and the contamination of groundwater as a result of these disposal practices. Declaration. Retained by the Plaintiff.	9/29/03
54	Court File No. MC00-001819; <i>State of Minnesota, by its Attorney General, Mike Hatch, Plaintiff, v. Employers Insurance of Wausau, A Mutual Company, et al., Defendants</i> in the District Court of Minnesota, Fourth Judicial District. Case involved the disposal of hazardous substances with industrial waste at the Oak Grove Landfill and East Bethel Landfill in Anoka County, and the contamination of groundwater as a result of these disposal practices. Affidavit. Retained by the Plaintiff.	2/5/03
53	Case No. 00-01917 MRP (MANx); <i>Shell Chemical Co., et al., Plaintiffs, vs. The County of Los Angeles, et al., Defendants</i> in the United States District Court for the Central District of California; Case No. 00-1938 MRP (MANx); <i>Phillips Petroleum Co., et al., Plaintiffs, vs. The County of Los Angeles, et al., Defendants</i> in the United States District Court for the Central District of California; and Case No. 00-6420 MRP (MANx); <i>Atlantic Richfield Co., et al., Plaintiffs, vs. BKK Corporation, et al., Defendants</i> in the United States District Court for the Central District of California. These combined cases involved hazardous substances associated with municipal solid waste being deposited at Cal Compact Landfill. Expert Witness Report. Retained by the Plaintiffs.	1/13/03
52	Cause No. 98-56362; <i>Browning-Ferris Industries, Inc., et al., Plaintiffs, v. Certain Underwriters at Lloyd's London, et al., Defendants</i> in the 80th Judicial District, District Court of Harris County, Texas. This case involved the disposal of waste containing hazardous substances and groundwater contamination at the Renner Landfill in Beaumont, Texas. Expert Witness Report. Retained by the Defendants.	1/03/03

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51	Case No. 80-1589; <i>United States of America, Plaintiff, vs. City of Philadelphia, Plaintiff-Intervenor, vs. Union Corporation Metal Bank of America, et al., Defendants, vs. Consolidated Edison Company of New York, et al., Third Party Defendants</i> in the United States District Court for the Eastern District of Pennsylvania. This case involved claims against the defendants concerning the release of PCBs from the Metal Bank/Cottman Avenue Site to the Delaware River. Rebuttal Report. Retained by the Defendants.	8/23/02
50	Civil Action No. 98-CV-0696A (F); <i>Booth Oil Site Administrative Group, Plaintiffs, vs. Safety-Kleen Corp., et al., Defendants</i> , in the United States District Court for the Western District of New York. This case involved claims against the defendants concerning the release of contaminants during used oil-recycling operations at the Booth Oil facility in North Tonawanda, New York. Affidavit. Retained by the Plaintiffs.	5/02/02
49	Case No. 80-1589; <i>United States of America, Plaintiff, vs. City of Philadelphia, Plaintiff-Intervenor, vs. Union Corporation Metal Bank of America, et al., Defendants, vs. Consolidated Edison Company of New York, et al., Third Party Defendants</i> in the United States District Court for the Eastern District of Pennsylvania. This case involved claims against the defendants concerning the release of PCBs from the Metal Bank/Cottman Avenue Site to the Delaware River. Expert Witness Report. Retained by the Defendants.	8/23/01
48	Civil Action No. 1999-48287; <i>Tim Dyring et al., Plaintiffs, v. Rohm & Haas Texas, Inc., et al., Defendants</i> in the 125th District Court of Texas. This case involved claims against the defendants concerning the release of hazardous substances to the groundwater from waste materials disposed at the Charley Burch Site in South Montgomery County, Texas. Expert Witness Report. Retained by the Plaintiffs.	5/31/01
47	Civil Action No. 95-2097; <i>Interfaith Community Organization, et al., vs. Honeywell International Inc., et al.</i> , in the United States District Court for the District of New Jersey. This case involved claims against the defendants concerning disposal of chromium waste at the Roosevelt Drive-In Site in Jersey City, New Jersey. Expert Witness Report. Retained by W.R. Grace & Co., W.R. Grace Ltd. and ECARG, Inc., Defendants.	3/27/01
46	Civil Action No. G-96-493; <i>Janie Rivas, et al., vs. Monsanto Company, et al.</i> , in the United States District Court for the Southern District of Texas Galveston Division. This case involves modeling of emissions and air dispersion of hazardous substances emanating from petrochemical wastes processed and disposed of at the Brio/Dixie Oil Processors Superfund Sites in Houston, Texas and related exposures to children in adjacent neighborhoods. Expert Witness Report. Retained by the Plaintiffs.	3/2/01

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45	Civil Action No. 5:97 CV00894; <i>United States of America vs. Chrysler Corporation, et al.</i> , in the United States District Court for the Northern District Of Ohio. This case involved claims against the defendants concerning disposal of hazardous substances in the Krejci Dump Site. Expert Witness Report. Retained by Minnesota Mining & Manufacturing Co., Defendant.	2/28/01
44	Civil Action No. H-98-0408 <i>United States of America, et al vs. Atlantic Richfield Company, et al vs. Ashland, Inc., et al.</i> , in the United States District Court Southern District of Texas Houston Division. This case involved claims against defendants concerning waste disposal at Sikes Pit. Expert Witness Report. Retained by ExxonMobil, Defendant.	2/15/01
43	Case No. 98-CV0726 <i>Connie Lolley Klostermann, et al vs. Ultramar Diamond Shamrock Corporation, et al.</i> , in the 212th Judicial District Court, Galveston County, Texas. This case involved a lawsuit by the landowner concerning property damage resulting from leaking storage tank contamination. Retained by Diamond Shamrock, Defendant.	5/19/00
42	Case No. 97-6222 MRP (MANx) <i>Commercial Realty Projects, Inc., and L.A. Metromall LLC, vs. Atlantic Richfield Company, et al.</i> , in the United States District Court in for the Central District of California. This case involved hazardous substances associated with municipal solid waste being deposited at Cal Compact Landfill. Retained by the Defendants.	5/8/00
41	Civil Action No. 95-CV-6400L, <i>Seneca Meadows vs. ECI Liquidating, et al.</i> This case involved claims against defendants concerning the disposal of hazardous substances in the Tantalo Landfill, Seneca Falls, New York. Retained by the Plaintiff.	4/18/00
40	Case No. 92-034865; <i>James E. Barnet, Sr., et al., vs. Monsanto Company, et al.</i> In the District Court of Harris County, Texas, 80th District Court. This case involved former workers' claims concerning exposure to hazardous chemicals. Retained by the Plaintiffs.	4/7/00
39	Case No. 97-6222 MRP (MANx) <i>Commercial Realty Projects, Inc., and L.A. Metromall LLC, vs. Atlantic Richfield Company, et al.</i> , in the United States District Court in for the Central District of California. This case involved hazardous substances associated with municipal solid waste being deposited at Cal Compact Landfill. Retained by the Defendant.	2/25/00
38	Civil Action No. 89-4340(JBS); <i>The United States v. Helen Kramer</i> ; United States District Court District of New Jersey. This case involved claims against a defendant concerning the disposal of hazardous substances in the Kramer Landfill (Superfund Site). Retained by the Plaintiffs.	6/99

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37	Civil Action No. G-96-494; <i>Thu Van Le, et al., v. Monsanto Co., et al.; Defendant.</i> In the United States District Court for the Southern District of Texas Galveston Division. This case involved modeling of emissions and air dispersion of hazardous substances emanating from petrochemical wastes processed and disposed of at the Brio/Dixie Oil Processors Superfund Sites in Houston, Texas and related exposures to children in adjacent neighborhoods. Retained by the Plaintiffs	2/5/99
36	Civil Action No. G-96-493; <i>Janie Rivas, et al., vs. Monsanto Company, et al.; Defendant.</i> In the United States District Court for the Southern district of Texas Galveston Division. This case involved modeling of emissions and air dispersion of hazardous substances emanating from petrochemical wastes processed and disposed of at the Brio/Dixie Oil Processors Superfund Sites in Houston, Texas and related exposures to children in adjacent neighborhoods. Retained by the Plaintiffs.	2/5/99
35	Civil Action No. 95-2215; <i>Becton Dickinson Puerto Rico, Inc., et al., vs. Cheeseborough Pond's Manufacturing Company, et al.</i> ; United States District Court for the District of Puerto Rico. This case involved claims against the defendant concerning the disposal of hazardous substances in the Juncos Landfill (Superfund Site). Retained by the Plaintiffs.	1/19/99 3/3/97 11/14/96
34	Case No. 95C-1065; <i>Lemberger Sites Remediation Group, Plaintiff, v. A.M. Richter & Sons Co., et al., and White Consolidated Industries, Inc., Defendants</i> ; In the United States District Court Eastern District of Wisconsin. This case involved hazardous constituents in waste going to Lemberger Landfill (Superfund Site). Retained by the Plaintiff.	11/12/98
33	Case No. 98-459-A, <i>Lewie Byers, vs. Texaco Exploration and Production Inc. and Texaco, Inc.</i> ; In the District Court of Smith County, Texas 7th Judicial District. This case involves claims of contamination due to releases of crude oil and fluids from oil field production activities. Retained by the Defendant.	4/30/99 2/29/99 1/29/99
32	Case No. 96-72483; <i>Minnesota Mining and Manufacturing (3M) Company, Plaintiff v. Howard W. Stein, Jr., Stein Enterprises, Inc. (f/k/a Stein's Flower Shop and Green Houses, Inc.), the Dow Chemical Company, and General Motors Corporation, Defendants.</i> In the United States District Court for the District of Michigan, Southern Division. Case involved evaluation of waste disposed at the Michigan Avenue Dumpsite by General Motors Corporation and Dow Chemical Company. Retained by the Plaintiff, 3M.	6/31/98 6/15/98
31	Case 75524; <i>Clarice Friloux, et al., Plaintiffs, vs. Campbell Wells Corporation, et al., Defendants.</i> In the 17th Judicial District Court, Parish of Lafourche, Louisiana. Case involved claims of offsite air migration of hazardous substances purportedly associated with a non-hazardous oilfield waste disposal facility. Retained by the Defendants.	5/4/98

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30	Court File No. 3-95-933. <i>Onan Corporation, Plaintiff and the State of Minnesota, and by its Attorney General, Hubert H. Humphrey, III, and by Its Pollution Control Agency, Intervenors, v. Continental Insurance Company</i> , Defendant. In the United States District Court, District of Minnesota. Case involved time of Leachate travel through two Landfills in Minnesota, Oak Grove Landfill and WDE Landfill, and the impact of the Leachate on the groundwater. For the Intervenors.	6/18/97
29	Civil Action No. 95-514875-CE; <i>Grand Trunk Western Railroad, Incorporated and Star Oil Company, Inc., Plaintiffs vs. Union Oil Company of California, Wynkoop Oil Company, Clement Wynkoop, Secory Oil Company and Lewis Secory, Defendants and Union Oil Company and Clement Wynkoop, Counter-Plaintiffs/Cross-Plaintiffs vs. Secory Oil Company and Lewis Secory</i> . Case involved modeling of the transport and fate of hydrocarbon fuels, which leaked from storage tanks at a terminal and allegedly migrated onto adjoining properties of plaintiffs. Retained by the Defendants.	5/22/97 6/2/97
28	Civil Action No. 96-C-00489-5; <i>Junker Landfill Trust, Plaintiff vs. United Waste Systems, Inc. et al., Defendants, and Junker Recycling, Inc., et. al., Defendants and Third Party Plaintiffs, vs. Garry Thompson, et al., Third Party Defendants</i> ; and Civil Action No. 96-C-00489-5, <i>Landfill Remediation Trust, Plaintiff vs. Garry Thompson, et al., Defendants</i> . In the United States District Court for the Western District of Wisconsin. Case involved contamination of groundwater, surface water, soil gas, and soil at the Junker Landfill (Superfund Site) and the relationship of that contamination to the wastes from over 450 generators. Retained by Plaintiffs.	2/20/97
27	Case No. 61180; <i>Kenneth and Helen Songer, Plaintiffs vs. Billy and Mary Clement d/b/a Cecle Clement & Sons, and Harrison, Walker, Harper, Inc. and Joe Archer, d/b/a Archer Excavating</i> . In the District Court of Lamar County, Texas, 6th Judicial District. Case involved claims of air contamination (hazardous gases and particulates) from trucking and excavating operations. Retained by the Defendants.	7/1/97 10/31/97
26	Case No. 93-C-0314; <i>Hunt's Generator Committee, et al., Plaintiffs v. Allis Chalmers Corporation, et al.</i> , Defendants. In the United States District Court for the Eastern District of Wisconsin. Case involved identification of waste products and hazardous substances within those waste products, which were disposed at the Hunt's Disposal Landfill Site near Caledonia, Wisconsin. Retained by Plaintiff PRP Group.	4/14/97
25	Civil Action No. 94-1449-A; <i>Ardith Cavallo, Plaintiff vs. Star Enterprise, Texaco Refining & Marketing (East), Inc., and Saudi Refining, Inc., Defendants</i> . In the United States District Court, District of Eastern, Virginia. Case involved claim of property damage from hydrocarbons in the groundwater, which allegedly migrated to plaintiff's property from a fuel terminal in Fairfax, Virginia. Retained by the Defendants.	3/6/97

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24	Case No. 93-004644; <i>Mike Adalis, et. al., Plaintiffs, vs. Neighborhood Development Corporation, et. al., Defendants.</i> In the District Court of Harris County, Texas, 269th Judicial District. Case involved claims of groundwater and related drinking water well contamination attributable to a 50 year old oil well blowout. Retained by the defendant Exxon.	12/16/96
23	Case No. 2:92-CV-111; <i>Commercial Union Insurance Co., et al. v. Cannelton Industries, Inc.</i> , In the United States District Court for the Western District of Michigan. Case involved claim against insurance company for environmental remediation cost recovery associated with chromium contamination of St. Mary's River due to a fire at an old tannery plant. Retained by Defendant.	9/5/96
22	Case No. 93-C-0324; <i>Hunt's Generator Committee, et al. v. Allis Chalmers Corporation, et al.</i> ; In the United States District Court, Eastern District of Wisconsin. Case involved identification of hazardous constituents in common household products found in the municipal solid waste from one city and disposed at the Hunt's Disposal Landfill Superfund Site at Caledonia, Wisconsin. Retained by Plaintiff PRP Group.	8/21/96
21	Civil Action No. H-95-776; <i>Rodney and Brenda Kay Beaver A/N/F of Wesley Michael Beaver and Claude Paul Hargraves v. Monsanto Company</i> ; In the United States District Court for the Southern District of Texas, Houston Division. Cause involved short-term exposure of children to toxic contaminants in air, soil, and drinking water at athletic facility located adjacent to waste disposal/processing sites (Dixie Oil Processors/Brio Superfund Sites). Retained by the Plaintiffs.	5/24/96
20	Civil No. BC015575; <i>Atlantic Richfield Co. and ARCO Chemical Co., v. Aetna Casualty and Surety Co. of American</i> . Superior Court of the State of California. A Declaration on behalf of ARCO Garber, ARCO Sand Springs, and ARCO Prewitt.	10/17/95
19	Civil Action No. 87-4263(JHR); <i>General Electric Company v. Buzby Brothers Materials Handling Company, et al.</i> United States District Court for the District of New Jersey. Case involved recovery from commercial and municipal transporters of wastes of the costs for remediation of groundwater contamination at the site of the RCA-Buzby Landfill (Superfund Site) near Voorhees, New Jersey. Retained by the Plaintiff.	9/28/95
18	Case No. 4-93-CV-193; <i>Cooper Industries, Inc., v. Abbott Laboratories, et al., in the U. S. District Court for the Western District of Michigan</i> . Case involving Sturgis (Michigan) Well Field Superfund Site and the apportionment of remediation costs as between plaintiff and 35 defendants for solvent contamination of groundwater. Retained by the Plaintiffs.	8/14/95
17	Civil Action No. 94-C-1025; <i>The City and County of Denver, et. al., v. Alumet Partnership, et al., and Alumet Partnership, et al., v. City of Aurora</i> . U.S. District Court for the District of Colorado. Retained by the Defendants.	5/31/95
16	Civil Action No. 94-1449-A; <i>Ardith Cavallo v. Star Enterprise, Texaco Refining & Marketing (East), Inc., and Saudi Refining, Inc.</i> United States District Court, District of Eastern Virginia. Expert Witness Report. Retained by the Defendants.	4/24/95

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15	Civil Action No. 93-CV-0080-B; <i>KN Energy, Inc. et al., v. Sinclair Oil Corporation d/b/a Little America Refining Company</i> . United States District Court, District of Wyoming. Expert Witness Report. Retained by the Plaintiff.	2/15/95
14	Docket Nos. BUR-L-2533-92/01267-93; <i>Gouryeb v. Woodland Township Planning Board</i> , Superior Court of New Jersey, Law Division/Burlington County. Affidavit. Retained by the Plaintiff.	12/1/94
13	Consolidated Civil Actions No. 90-75 BU-PGH; <i>ARCO v. Oaas, et al.</i> , and No. 91-82-BU-PGH, <i>United States v. Montana Pole and Treating Plant, et al.</i> United States District Court for the District of Montana, Butte Division. Expert Witness Report. Retained by the Defendant/Third Party Plaintiff.	8/15/94 9/12/94
12	Civil Action No. 94-243-A; <i>William H. Ogden and Gay E. Tiffany v. Star Enterprise, et al.</i> United States District Court for the Eastern District of Virginia, Alexandria Division. Declaration. Retained by the Defendants.	8/31/94
11	Civil No. 93-186; <i>United States v. Somerset Refinery, Inc.</i> United States District Court for the Eastern District of Kentucky. Expert Witness Report. Retained by the U.S. Department of Justice.	8/26/94
10	Civil No. 93-381-A; <i>Brian Feikema et al., v. Texaco, Inc., et al.</i> United States District Court for the Eastern District of Virginia. Declaration. Retained by the Defendants.	7/14/94 6/29/94
9	Docket No. N-93-39-BU-PGH; <i>Montana Resources Inc., et al., v. Atlantic Richfield Co.</i> U.S. District Court for the District of Montana. Retained by the Defendant.	6/14/94
8	Case No. 89-135; <i>Citizens Asking For a Safe Environment, Inc., et al., v. South Carolina Department of Health and Environmental Control, et al.</i> In the Matter of the RCRA Permit Decision for GSX Services of SC, Inc. Pinewood Facility, Sumter County; SC, before the State of South Carolina Board of Health and Environmental Control. Retained by the Opposition.	3/94
7	File No. 3-90-312; <i>Kenneth M. Anderson as Personal Representative of the Estate of Fred W. Hedberg v. City of Minnetonka et al.</i> United States District Court for the District of Minnesota, Third Division. Affidavit. Retained by the Plaintiff.	12/18/92
6	Affidavit and rebuttal affidavit regarding the proposed Lon C. Hill-Coleto Creek 345 kV transmission line. Retained by Central Power & Light.	10/21/91 8/90
5	File No. 3-90-312; <i>Kenneth M. Anderson as Personal Representative of the Estate of Fred W. Hedberg v. City of Minnetonka et al.</i> United States District Court for the District of Minnesota, Third Division. Retained by the Plaintiff.	7/16/91
4	Civil Action No. N-87-52 (both cases); <i>The B. F. Goodrich Company, et. al., v. Harold Murtha, et al., and Harold Murtha, et al., v. Risdon Corporation</i> . Circuit Court for the State of Connecticut. Contribution of municipal waste to environmental contamination associated with the Beacon Heights and Laurel Park Landfills (Superfund Sites). Retained by the Laurel Park and the Beacon Heights Coalitions.	6/29/90

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3	Cause No. C88-0190-B consolidated with C89-0153-B; <i>Sinclair Oil Corporation v. James S. Scherer, et al., and United States of America v. Sinclair Oil Corporation</i> . United States District Court for the District of Wyoming. Suit concerning alleged contamination from refinery operations. Retained by the United States.	4/27/90
2	Case No. 80-4-CIV-7; <i>The United States of America v. Waste Industries, Inc., et al.</i> United States District Court for the Eastern District of North Carolina, Wilmington Division. Affidavit on leaking municipal landfill. Retained by the Plaintiff.	9/29/85
1	Affidavit and rebuttal affidavit regarding the proposed expansion of the Azusa Landfill (CA). Retained by an <i>amicus curiae</i> party.	

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EXPERT WITNESS REPORTS/AFFIDAVITS

3	Report of "An Investigation and Assessment of the Texaco Sand Flat Unit," by Dr. Kirk W. Brown. Prepared for Wallace, King, Marraro, and Branson, LLC on behalf of Texaco Exploration and Production.	11/13/98
2	Report of "Evidence of Leachate Leaking from Azusa Landfill," by Dr. Kirk W. Brown. Prepared for Geoscience Support Services, Inc. for Metropolitan Water District of California.	
1	Cause No. 93-1235; <i>Adams, et al., v. RSR Corporation, et al.</i> 71st Judicial District Court; Harrison County, Texas. Retained by the Plaintiffs.	12/14/94

APPENDIX 3

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